

THE MEDICAL NEWS.

A WEEKLY JOURNAL OF MEDICAL SCIENCE.

VOL. XLIX.

SATURDAY, JULY 31, 1886.

No. 5.

ORIGINAL ARTICLES.

THE CARDIAC COMPLICATIONS OF BRIGHT'S DISEASE.¹

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THE heart and the kidneys stand in relation to each other, in the machinery of man, as the feeding or force-pump, and the escape or waste-water pipe. Disease of either one of these organs is therefore, of necessity, attended, sooner or later, with disease of the other.

In this relation the disease process may begin in the heart. In the general interference with the circulation which then ensues, stasis in the kidneys is revealed by a diminution in the quantity of urine, which becomes dark and heavy, shows thick deposits of urates, and later albumen, hyaline cylinders, and blood corpuscles. Both acute and chronic nephritis may thus develop from endocarditis or myocarditis.

Or, the kidneys may be affected secondarily by becoming the repositories of emboli, benign or malignant, with hemorrhagic infarctions, and so-called metastatic abscesses, which reveal themselves by the sudden appearance of hematuria, by suppression of urine, or may remain latent to be discovered only upon autopsy.

Next, both heart and kidneys may be affected simultaneously under the operation of the same cause, as by alcoholism, syphilis, or gout, as well as in the general wreck of the so-called arterio-capillary sclerosis.

Lastly, the disease process begins in the kidneys and leads consecutively to disease of the heart, to pericarditis, more rarely to endocarditis, but most especially to hypertrophy of the left ventricle, a complication universally observed ever since its presence was first pointed out by Bright, though its significance has received proper interpretation only within recent years.

This curious condition which we know now to be compensatory, hence, to be favored and sustained in every way, is the sole cardiac complication which the limit of time allotted will permit me to discuss.

Hypertrophy of the left ventricle belongs to Bright's disease as much as do dropsy, albuminuria, and uræmia. It is one of the cardinal symptoms of the disease, but it rises above the other signs, rises, in fact, to physiological dignity in that it expresses an effort to overcome or neutralize the main effects of the disease.

It should be remarked, in the first place, that hypertrophy of the left ventricle is present in every case of chronic nephritis. The view that it oc-

curs only in renal cirrhosis, in the so-called granular, contracted, or atrophied form of the disease, and is limited to this form, has been shown to be entirely erroneous. There is no such thing as a chronic nephritis without hypertrophy of the heart, unless, indeed, in the fortunately few cases where the patient is too feeble to develop an increase of tissue in any organ. Apparent but not real exception is also offered in the last stages of Bright's disease, when the hypertrophy has finally given place to dilatation as a last link in the chain of the disease process. The statement of Bartel's that any hypertrophy of the heart without valve lesion to account for it, ought to direct attention to renal cirrhosis should be modified to read, should excite suspicion of Bright's disease in general. A hard, wiry pulse, in the absence of fever or of any superficial evident disease, is enough, of itself, to excite this suspicion in the mind of the alert practitioner, and the sign is all the more valuable in that it shows itself early in the insidious course of this disease, months and sometimes years before nervous symptoms, dropsy, or failure of nutrition suggest the nature of the affection. For the increase in the impact of the heart is frequently to be observed in the course of two to four weeks from the inception of the disease, when this period may be determined, at which time it is already demonstrable on autopsy. It develops quickest and most completely in the healthy and robust.

Theories only prevail as yet regarding the cause of it. Bright who, as remarked, discovered it, but who could not at that time realize the importance of it, adopted the conservative view that it was caused either by the irregular and unusual irritation of the heart produced by the changed condition of the blood, or by the call upon the heart for increased activity to force the blood through distant contracted bloodvessels. Bright thus announced the two theories, chemical and mechanical, which still find advocates in the present day. In 1856, Traube published his support of the mechanical view in a paper that has been widely quoted ever since. He noticed it in connection only with the contracted kidney, and made it diagnostic of this form of Bright's disease. He derived it from the diminution in the quantity of blood flowing through the kidney, diminution also in the quantity of urine excreted, with the consequent accumulation of fluid in the aortic system and elevation of blood pressure. Traube established the theory of compensation.

In refutation of this view, it has been shown, first, that after extirpation of an entire kidney or the amputation of an entire member, with the consequent ablation of a much greater number of capillaries, whole systems of capillaries in fact, hypertrophy of the heart does not ensue, as the blood finds escape to other vessels, in the case of the kidney to the other kidney, which enlarges to do double duty;

¹ Read before the Ohio State Medical Society, June 3, 1886.

second, that hypertrophy develops also in cases where there is no atrophy of the kidney substance, as in chronic parenchymatous nephritis; third, that there is no diminution, but, on the contrary, an increase in the excretion of urine in the granulated kidney; fourth, that ligation of the ureters alone is followed by this hypertrophy.

But these objections have been more or less successfully met thus: first, that the cases of extirpation of the kidney have not been watched long enough to observe gradual and remote effects upon the heart. Grawitz and Israel in their experiments upon rabbits, and Lewinsky in his experiments upon dogs, in securing not sudden but gradual occlusion of the renal arteries, such as occurs in disease, invariably saw degeneration of the kidney structure ensue with hypertrophy of the left ventricle of the heart; second, that while this hypertrophy does follow parenchymatous nephritis, there is none the less occlusion in this form of Bright's disease; third, that while the quantity of water is increased in renal cirrhosis, the blood-pressure is undoubtedly raised in the aorta to produce the increase in the water excreted; and fourth, that ligation of the ureters produces disease of the kidneys leading at times to obstruction of the circulation, and when this obstruction does not occur, as in cases of pyelitis, no hypertrophy of the heart ensues.

From this summary of the evidence, it must be admitted that the bulk of testimony favors the mechanical theory and puts this hypertrophy in the same position as that which ensues upon valvular defects, or as that which occurs in the right ventricle in consequence of any block in the lungs. It is difficult to subscribe to the chemical theory of hypertrophy as advocated recently by Frerichs and Senator in the face of the fact that uræmia or retention of any toxic elements of the urine from other cause, as from cystitis, pyelitis, etc., is not attended by hypertrophy of the heart. There is abundant analogy in the body for hypertrophy in face of obstruction, that is, hypertrophy and hyperplasia, increase in size from increase of activity, but none for increase in anatomical elements under the action of a poison.

Inasmuch as the hypertrophy is preceded by a rise in tension in the aortic system, the pulse shows changes before the heart. It becomes, as stated, full and hard. It is at this time also slow, and while its frequency is increased with the development of the ventricular hypertrophy, it remains full and hard until the force of the heart finally begins to flag. The pulse now becomes rapid, feeble, and in the last stages flutters, so that most cases, unrecognized hitherto, are regarded as cases of simple heart disease. Then, inasmuch as the last stages of primary heart disease involve the kidneys with consecutive lesions, it is at times impossible to declare the order or sequence of the disease process, though this fact has at this time little or no clinical value, as the subsequent duration of life is short. The recognition of this relation between the heart and kidneys gives a satisfactory explanation to the popular belief that Bright's disease is on the increase in modern times, for many cases of primary Bright's disease were formerly regarded as cases of heart disease.

Of far higher value is the early recognition of Bright's disease before extensive lesions in the kidney have been produced, for it is only at this time that the disease process may be checked or cured.

Where the suspicions of the physician are once excited the diagnosis of Bright's disease is usually easy enough. The practitioner who makes it a habit to test the urine, if only by heat, in every case of chronic disease is rarely led astray. But the observation must be made with constant knowledge of the fact that while the presence of albumen in a general way denotes disease, the absence of it by no means of necessity excludes it, as it is exactly in the cases of renal cirrhosis in which for days at a time not a trace of albumen may show in the urine, healthy urine being voided from regions of the kidney entirely unaffected by disease, while the diseased parts are completely blocked.

In all these cases, as well as in those where the patient presents himself with a diagnosis of heart disease when no valve-lesion can be found to account for it, the kidneys should be suspected and scrutinized for symptoms immediate and remote.

Hypertrophy of the left ventricle reveals itself first by a slight deviation of the apex to the left. Obesity, or, later, anasarca or hydrops, may conceal or obscure the increase in size, but nothing may conceal or obscure the dislocation of the apex beat. A heart which shows its apical stroke below or to the left of the nipple is either enlarged or out of place. Various extrinsic causes may also produce the condition, but they may be more or less eliminated in the history of the case. At least a pleuritic effusion or a tuberculous change in the lung-tissue, the most common extrinsic causes, should not long embarrass a diagnosis. Hypertrophy from endocarditis would distinguish itself by a characteristic bruit, as well as by accentuation of unaffected valves.

The increase in the size of the heart manifests itself by dullness, which extends to the left of the mammary line. In a pronounced case this increased dullness is readily recognized, but when slight in degree it is not so valuable as deviation of the apex. Perhaps it is not unfair to say that moderate hypertrophy of the heart makes itself manifest to most of us by the increased area, not of dullness, but of impact to the hand laid flat upon the surface of the chest, or to the face in auscultation of cardiac sounds.

The next most valuable sign of this hypertrophy is accentuation of the second aortic tone. The reason of this is obvious. The hypertrophied ventricle forces its blood into the aorta which is already distended, and the closure of the aortic valves follows under pressure with a quick short click—in short, with a distinct accentuation audible all over the heart, but in greatest intensity at the base, on the right of the sternum at the junction of the second rib. Now just as accentuation of the pulmonic valve sound, which is heard in its maximum intensity on the left of the sternum, points to hypertrophy of the right ventricle from mitral regurgitation due chiefly to endocarditis, does accentuation of the aortic sound point to hypertrophy of the left ventricle due chiefly to Bright's disease.

These four signs, increased tension of the radial

artery, dislocation of the apex to the left, increased dulness and impact, and accentuation of the second aortic tone, constitute the phenomena of this principal cardiac complication of Bright's disease. The importance of them becomes evident with the observation that they all exist at a time when there may be no subjective symptoms pointing to the heart.

But the compensation of this hypertrophy is not always exact. It may reach extremes in both directions, of excess and of failure. In otherwise healthy, vigorous subjects, more especially in those leading indolent or sedentary lives, or in children with abundant nutrition, it reaches a degree at times superior to the demand. Attacks of violent palpitation may then ensue with audible throbbing and marked increase of impact which makes itself manifest in yielding chest-walls as visible elevations or prominent bulgings of the surface. Hyperæmia of the brain occurs in these cases with intense headaches, and vertigo entirely independent of uræmia, and epistaxis may be frequent and severe. Strümpell reports two cases of fatal nose-bleed from this cause.

On the other hand, in constitutions enfeebled by original constriction or by acquired disease, the cardiac hypertrophy may fail to develop, and in all cases sooner or later it must fall short under the gradually increasing demands. The nice compensation which has hitherto sufficed to obviate the main danger of nephritis, the retention or non-excretion of sufficient urine, becomes disturbed, and the signs of accumulation of toxic elements speedily ensue.

The first sign of a flagging heart is noticed in the pulse, which loses its hardness to become frequent and small. The great evil of stasis in the lungs from incomplete emptying of the left ventricle, accumulation in the left auricle and pulmonary veins, is counteracted for a short time by hypertrophy of the right ventricle which now sets in. But it is a work of Sisypheus that is thus thrown upon the right ventricle. It soon yields to the strain, and dilatation is evidenced in the attacks of bronchitis, dyspnoea, asthma, and œdema pulmonum which soon supervene. There is headache from anæmia of the brain, and general dropsy, which commences about the ankles and eyelids, mounts to the genital organs, and, invading the serous sacs, soon puts an end to the scene.

Bright's disease is subject to many accidents, the mention of which is superfluous here; but few of these accidents may occur while the heart is able to compensate the defect in the kidneys. So long as the increase in its size may enable it to force more blood through vessels yet unobstructed in the kidney neither dropsy nor uræmia may ensue. The gradually increasing hypertrophy of the heart is the reserve guard that is brought to bear upon the enemy in front. The successful therapy of Bright's disease calls, therefore, for a close regard of the condition of the heart. When the compensation is excessive, so to speak, the heart should be quieted, above all things, by rest, by the use of the bromides, possibly by an occasional dose of chloral, or, if necessary, by the application of an ice-bag over its walls. Gentle exercise is indicated after the acute explosion of the attack.

But it is the failure that is to be feared more than

the excess. Here, above all things, is absolute rest to be secured. Where the means of the patient will permit, nothing is so valuable as a sojourn in a warm and equable climate. I have myself seen several cases of pronounced Bright's disease cured by a winter's stay in Florida or Nassau. For the mass of patients confinement, not only to the house, but to bed, secures, with an equable temperature, the best conservation of the force of the heart. Sooner or later appeal must be made to digitalis. It should be given first in small doses, lest it overstimulate, to be gradually increased according to demand, and discontinued, lest it exhaust—so soon as its effect is apparent upon the heart. The best preparation is known to be the infusion, freshly prepared from the leaves. It should be given to adults in doses varying from a teaspoonful to a tablespoonful, every two or three hours, with knowledge of the fact that it does not begin to show decided effects for twelve hours, and continues as long after its administration is stopped. Should it be continued long after its full effect is produced upon the pulse, the heart is tetanized, and the patient falls into collapse. Its diuretic action is much increased by the addition of the acetate of potash, but the infusion does not keep so well with this addition.

It is indeed a fatal mistake to administer digitalis while the heart is still adequate to the work of compensation. Neither uræmia nor albuminuria, of necessity, calls for digitalis. Dropsy is, in general, the best indication, because dropsy indicates inadequate compensation on the part of the heart, which is also, and often in the absence of dropsy, manifest in the condition of the pulse. Other symptoms of Bright's disease are infinitely better treated by appeal to the skin, wherein prolonged hot baths outrank all other remedies.

When the heart has fully responded to digitalis, and its further administration is contraindicated by the state of the pulse, tonic effects are best sustained by arsenic and iron; and when, finally, the heart no longer responds to digitalis, resort must be had for relief of symptoms to alcohol and morphia. But this day may be long delayed by a vigilant supervision of the heart, which, next to the secretion directly from the kidneys, most distinctly gauges the stage of the disease.

SOME CLINICAL FACTS ILLUSTRATED BY:

1. A CASE OF ABSCESS OF THE LIVER AND ULCER OF THE STOMACH.
2. A CASE OF ULCERATIVE ENDOCARDITIS.¹

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THERE are certain diseases in which the conformity to the classical type is so uniform that a special description is superfluous, but there are others in which the diagnosis is rather made up by exclusion based upon an estimate of the rational symptoms, the physical signs, and the etiological relations. Cases of disease belonging to this class will always possess an

¹ Read before the Clinical Society of Philadelphia, March, 1886.

interest when considered independently of others, until their clinical delineation shall become as distinct as the differences which define enteric from typhus fever.

There are certain morbid processes which affect different organs, yet which possess clinical symptoms in common which make it reasonable to study their diagnostic features at the same time. As an example, I shall first describe a case of multiple abscess of the liver with perforating ulcer of the stomach. The specimens were taken from the body of Thos. G., a colored man twenty-nine years of age. The liver was very much enlarged, weighing six pounds. The entire right lobe was filled with small, round, abscess cavities, some as large as an orange, possessing ragged walls formed of the broken-down hepatic tissue, and containing laudable yellow pus. The peri-hepatic surface beneath the diaphragm was covered with lymph, but no pus. Beneath the left lobe of the liver, but without communicating with the hepatic gland, was found a collection of pus completely encysted by adhesions formed by the mesentery, which enclosed also the posterior wall of the stomach, the head of the pancreas, and the adjacent tissues. Communicating with this abscess cavity was a short sinus which terminated in an ulcer in the upper part of the posterior wall of the stomach, near the lesser curvature and in the middle zone. Without doubt the abscess was a secondary lesion developed after the perforation of the wall of the stomach. The spleen was enlarged, weighing sixteen ounces, but the other abdominal viscera were normal. There was an old cavity in the apex of the left lung with induration of the lower lobes, pleural adhesions, and evidences of recent pericarditis sicca, doubtless excited by the adjacent hepatic inflammatory processes. The pulmonary process had been latent or in stage of arrest prior to the outbreak of the disease in the abdominal organs.

The salient clinical features were that the patient entered the Hospital during the latter part of December, complaining of indisposition, but was discharged at his own request, and returned to his occupation as an hostler. He was readmitted to the wards February 1, 1886. Thus the existing disease must have developed during a period not more than four weeks. When admitted he gave the history of indisposition for the preceding two weeks with nose-bleed, a few irregular chills, and slight diarrhoea, with weakness. The temperature on admission was 105°, subsequently ranging as follows:

Feb. 1, 105° A. M., 100° P. M.	Feb. 11, 103° A. M., 100° P. M.
" 2, 95.4 " 104 " "	" 12, 102 " 106 " "
" 3, 97 " 101 " "	" 13, 95 " 105 " "
" 4, 95 " 100 " "	" 14, 97 " 101 " "
" 5, 97 " 100 " "	" 15, 99 " 104 " "
" 6, 101 " 102.4 " "	" 16, 96 " 102.4 " "
" 7, 101 " 103 " "	" 17, 97 " 97 " "
" 8, 101 " 102 " "	" 18, 104 " 96 " "
" 9, 100 " 102 " "	" 19, 99 " 97 " "
" 10, 101 " 102 " "	

For the first four days it was an intermittent temperature with a wide daily range of fluctuation, specially marked by fall of temperature on four occasions to 96° or 97°. For seven days the temperature was remittent in type varying between 100°—

102°, sometimes 103°. On the twelfth day it rose to the highest point—106°, and subsequently fluctuated between 104° and 96° or 97° until the day of his death. During the last six or seven days of the illness the temperature was very irregular, showing its maximum between 12 midnight and 12 midday, but was low at 7 or 8 A. M.

The typhoid state was present during most of the illness, but although the liver was defined as enlarged there was never any pain or tenderness, no jaundice, no tympany, or, in fact, a single symptom to draw attention to the liver save the increase in size, which was not extreme or greater than is frequently observed in remittent fevers. During the illness there was no pain or tenderness over the region of the stomach, and only one or two stools daily. It was, however, noticed that the general symptoms of illness would markedly increase during a certain portion of the day, and that during the remission of the temperature the condition of the patient would become conspicuously improved. There was one slight chill, and once an attack of epistaxis. The symptoms of the pulmonary conditions were latent.

The diagnosis in this case was subject to debate until the death of the patient, typhoid or typhomalarial fever, and hepatic abscess being canvassed, but the entire absence of any special local symptom connected with the liver caused the latter diagnosis to be laid aside until the duration of the case rendered the above named fevers unlikely.

In the diagnosis of hepatic abscess it must be borne in mind that the condition is often latent. The symptoms have been classified under the rational and the physical signs in connection with an analysis of the etiological probabilities. With these methods of study, hepatic abscess must usually be recognized by exclusion, since the symptoms are by no means pathognomonic, and the diagnosis must be manifest or obscure in proportion to the presence or absence of signs or symptoms which tend to locate the process of the disease below the diaphragm.

One of the most important symptoms in this connection is the thoracic character of the breathing and the deficient diaphragmatic movement. This is due to the presence of local or general peritonitis, especially the peri-hepatitis so often observed.

In thirteen cases recorded by Carrington,¹ general peritonitis was observed in four, while in six the local peritoneal process was found, and yet in the case I have presented the abdominal distention was not noticeable, although at times the abdominal muscles were hard with rigid recti. Abdominal pain and tenderness might be considered an important symptom, and appeared in twelve of Carrington's cases, but was absent in nine.

The temperature in multiple hepatic abscess is especially valuable as a means of diagnosis, and I have compared the observations made by Carrington and others with my own, and have included the temperature recorded in certain cases of hypertrophic cirrhosis.

The special features of the thermometrical record

¹ Guy's Hosp. Rep., vol. 26, 1883.

worthy of remark were that there were many days on which the temperature was *subnormal*, and one should justly consider such a record as of high diagnostic value. But cases of multiple pyæmic hepatic abscess without pyrexia have been recorded by Murchison¹ and by Guitéras;² the temperature in a case of hypertrophic cirrhosis reported by the latter was noted carefully from October 21 to November 3, and found to be below normal in the mornings of ten of these days, once as low as 91°, once 94°, once 95°, and several times 97°. In this case, however, it is true that the evening temperature was not very high, only on four days being over 100°, and several times showing a record below 98°. Dr. Guitéras, in commenting on the temperature thought it might be due to an intermittent absorption of effete products from the liver, or an intermittent arrest of the oxygenating processes going on in the liver, an arrest that must influence the general temperature, if we remember that in health the temperature of the liver reaches 106°.

The case of hypertrophic cirrhosis by Carrington shows that the temperature taken for twenty-four days gave 100.4° A. M., 103° or 104° P. M. on several occasions, and was for twenty days fluctuating between 99° and 101°, with an occasional fall to 98°.

Murchison and Frerichs mention that there may be a slight degree of fever in hypertrophic cirrhosis, but seem to allude to the rise in a way that suggests their belief that it may have followed some imprudence of diet or unusual excess in stimulants or succeeded a chill. Thierfelder (Ziemssen's *Ency.*, vol. 9) alludes to a rise of temperature as an exceptional feature under the same general circumstances.

Carrington, in reporting fifty cases of cirrhosis of the liver uncomplicated by lesions which would of themselves cause fever, has found a considerable number of cases with a febrile movement similar to that recorded, and has published examples of the same, and this fact in connection with hypertrophic cirrhosis is of especial interest, since Fouquier observes that it is the peculiarity of parenchymatous organs and particularly of the liver to occasion no fever even when they are the seat of intense disease. It is, however, a fact that the pyæmic state is attended by wide fluctuations of temperature and in abscess of the liver a subnormal temperature is often observed. (See also vol. ii., *Trans. Pathological Society of Philadelphia*, Eskridge.)

Nancrede, of Philadelphia, has alluded to the fact that a subnormal temperature is characteristic of abscess in the brain substance. I do not know that his observations have been confirmed by others, yet the statement is very interesting when one is considering the question of abscess in the parenchyma of organs. In abscess of the liver it would also appear according to Annesley, Haspel, Louis, and others, as quoted by Frerichs, that this intermittent type of temperature may resemble malarial quotidian, tertian, quartan, or a double type, but differs in the irregularity with which the attacks come on, and the inutility of quinine.

It is especially noteworthy in consulting the records of cases that sweating although present at times, is neither a constant nor prominent symptom of hepatic abscess, and that rigors are far more often absent than present; and the fact recalls Fouquier's observation relative to the temperature in hepatic disease already cited. But if the abscess ruptures spontaneously or is opened, sweating becomes the common rule. The pulse and respiration are usually quickened in accordance with the exacerbations of temperature, but except during this period the pulse is slower in my experience than in other pyæmic or typhoid fevers.

In multiple pyæmic abscess of the liver, the more or less complete typhoid state with dry brown tongue and sordes on the teeth is quite a constant but not invariable accompaniment. Wasting is usually a prominent symptom throughout.

It will be remembered that in the case which formed the basis of this paper the liver was recognized during life as enlarged. A similar increase in size was observed in all of Carrington's cases but the last; the maximum increase in size measured from the third rib to one inch below the margin of the ribs, and subsequently increased from half an inch to an inch. But in hypertrophic cirrhosis I have frequently found the area of deep dulness to extend from the fourth interspace to two inches below the margin of the thorax in the line of the nipple. I incline to think that the enlargement of the liver in abscess is only a relatively important sign, since in addition to the forms of cirrhosis with enlargement considerable increase in the size of the liver is often recognized in prolonged remittent fevers.

The sense of fluctuation is seldom recognizable in multiple pyæmic abscess which, as shown in the specimen, are small or lie too deep, but obviously this symptom would have a high diagnostic value. The remaining symptoms often presented in reports of cases of pyæmic hepatic abscess would seem to me to possess a minor importance. In Carrington's cases, for instance, jaundice was observed only in one-third the number of histories. Curiously, while it was a marked symptom in two cases, one with complete obstruction of the ducts, it was also present in a case without this condition. It was slight in two other cases; in each of which, however, the urine contained bile, and in two others the complexion was sallow and yellowish. Symptoms referable to the stomach and bowels, such as vomiting or diarrhoea, would seem obviously connected with lesions within the alimentary tract, such as dysentery, gastric or duodenal ulcer. I allude especially to this point, because in my case serious gastric lesions were present without the occurrence of vomiting or symptoms of gastric distress, and this, notwithstanding that the administration of food and stimulants was pushed to its furthest limits.

Finally the duration of the illness in pyæmic abscess varies widely. In the thirteen cases of Carrington, eighty days was the longest, and five days the shortest period of duration; but the condition of the related viscera must govern the prognosis so far as time is concerned, and this coincides with the views of Murchison and Frerichs; also when the

¹ Diseases of Liver, p. 175.

² Transactions Philadelphia Pathological Society, vol. 8.

abscess opens into the viscera or externally life is much prolonged.¹

Last of all, the etiology of the disease should be a prominent factor in any bedside study, although I confess I believe the etiology of an hepatic abscess is more frequently studied at the post-mortem table. The classification of Murchison, which divides hepatic abscesses into two varieties, pyæmic and tropical, is most satisfactory. In the first class are placed all those cases which originate from external injuries or surgical operations, from ulceration of the stomach, intestinal canal, gall-bladder, bile-ducts, cervix uteri, or from any other source of purulent absorption, and in which the abscesses are small, round, and numerous. It is this variety of abscess which is almost, if not exclusively, met with in the temperate zone. In addition to the foregoing cases the portal vein should always be examined for evidence of phlebitis or thrombosis. The etiology of many cases can be explained on this basis, as can be seen in the accompanying specimen.

The second class embraces those which originate in tropical climates, in which suppuration cannot be ascribed to dysentery or to a pyæmic source, or to mechanical violence, and in which it is exceptional to find more than one large abscess—in a word, this species of abscess would seem to follow acute idiopathic inflammation of the hepatic tissue.

The distinction seems chiefly to be an etiological one, for while in typical examples of either group the symptoms and physical signs are somewhat different, there are other cases where they are identical, and the distinction founded on anatomical conditions, such as large size, small number (one to three) of tropical abscess, with tendency to burst externally into the pleura, lung, or intestinal canal, as contrasted with the opposite character of pyæmic abscess are not always observable.

The specimens from the case of ulcerative endocarditis, which I shall also present with the narrative of the symptoms, have suggested thoughts which seem related to what has gone before, chiefly because the pyæmic type of temperature is a marked clinical feature in this process.

James G., aged thirty-eight, Irish, was brought to the Philadelphia Hospital, February 1, 1886. He had a severe chill while in the ambulance, and the temperature on admission was 105° F. He stated that for six months he had been broken down in general health, that he had contracted malaria in Ohio last spring, and had suffered occasionally from chills and fever ever since July. For the last six weeks he had been confined to bed with occasional chills with fever. His appearance was that of a fairly nourished man of large frame but quite anæmic. The spleen was found to be enlarged, a soft double aortic murmur was audible up and down the sternum. The temperature record was:

Feb. 1,	A. M.,	105° 2 P. M.,	104° 7 P. M.
" 2,	99.3°	" 99	"
" 3,	98	" 106	"
" 4,	102	" 102.4	"
" 5,	100	" 101.4	"
" 6,	97	" 103	"
Death at 11.45 P. M.			

¹ See statistics on this point in Frerichs's Diseases of the Liver.

He rose from bed five days after admission to go to the water-closet, and fell dead while crossing the ward.

The post-mortem examination was made sixty-two hours after death. On opening the heart, the aortic valves were found to be the seat of the principal lesion. The intercoronary leaflet was perforated near its right border. The torn and ulcerated surfaces were very ragged, and large fungous warty vegetations were attached to the surfaces, forming a bridge connecting the intercoronary valve to the left anterior valve. These vegetations appeared as though they had been recently torn through, and that the giving way of this part of the valve had been the immediate antecedent of the sudden death. The right valve had its posterior portion ulcerated through, and along the margin of the valve the border was thickened and soft. The left coronary valve was uninjured except at one small point to which was attached a filament of the vegetation already mentioned. The affected surfaces had a reddish-gray color. There were a few patches of atheroma near the valves, and the lining membrane of the aorta was in some places covered with lymph. The aortic arch was unaffected. The heart weighed thirteen ounces. The muscle was of good color, but soft and flabby. The right ventricle contained a buff colored clot which extended into the left auricle and pulmonary artery. The tricuspid and pulmonary artery valves were healthy. The left ventricle was dilated. The anterior leaflet of the mitral valve was somewhat thickened at its border. The spleen was more than double its normal size. Its consistency was increased, and its capsule thickened. There were no embolic infarctions.

The liver was fatty and cirrhotic, slightly smaller than normal. The kidneys were both examples of fatty and parenchymatous nephritis. During life the case was supposed to be one of chronic valvular disease with malarial cachexia, and with breaking down of compensatory hypertrophy. This diagnosis was based upon the statements of the patient, viz., that he had been exposed to privation, with irregular chills and fevers, contracted in the West six months before. Moreover, there was enlargement of the spleen, and an anæmic, sallow appearance of the surface of the body. There was at no time albumen or casts in the urine, and no dropsy. The post-mortem examination has necessitated a revision of this diagnosis to that of acute endocarditis involving the aortic valve, exhibiting extensive ulcerative lesions.

The process known as acute endocarditis has been subdivided and separately described under the designation of ulcerative or malignant, as opposed to the simple inflammatory forms. Etiologically the infectious nature of the disease is the prominent characteristic, and involves the study of certain micro-organisms which have been found in connection with the endocardial lesions. In the present case the length of time which elapsed before the post-mortem could be made, rendered the search for these organisms difficult. Anatomically considered, the lesions of acute endocarditis have been described as vegetative, ulcerative, suppurative, and sclerotic. In the specimens presented this evening we have destruction of the valves by ulceration with vegetations.

Although no primary or secondary centres of embolic infection were found, the designation ulcerative endocarditis seems the only proper one. The disease in general is known to develop under many distinct associations. Rheumatism would seem, from recent writing, to be an infrequent but possible antecedent. Ulcerative endocarditis is sometimes secondary to pneumonia. In the case reported in this paper, the predisposing condition may have been the rheumatic diathesis, malaria, or the debilitated condition of the patient's general health, doubtless secondary to the alcoholic habit, which was markedly indicated by the post-mortem lesions.

The history of the patient is suggestive of the obscure character of the rational signs. If we suppose a case in which, during an acute disease, evidences of valvular lesion develop, or if, during the progress of a case of old valvular disease, evidences of an acute process supervene, the salient physical sign suggesting the diagnosis of ulcerative endocarditis is, in the first place, the temperature. This differs somewhat under its different causative relations. In the cases I have seen the pyæmic character has been usually present, and profuse sweating has been common. This characteristic has been noticed by Dr. Henry Thompson,¹ as second only to that of ague, and usually far beyond the average mark of phthisis or pyæmia. In this disease, just as in pyæmic hepatic abscess, the intermittent type of pyrexia simulating a quotidian or tertian ague has been described by Wilks, Bristowe, Coupland, Lancereaux, and Leyden. Various cases are also related in which the diagnosis was yet more puzzling by the clear history of ague, and the attacks were so characteristic that a suspicion of malignant endocarditis was not at first entertained. It was only after the failure of quinine and a variation in the character of the paroxysms that a diagnosis was reached. The interpretation of the temperature chart in this disease may also be rendered difficult by the duration of the symptoms, which in one case of ulcerative endocarditis was prolonged to four months, and in this connection the statements of my patient as to the commencement of his ill-health may be recalled. The temperature in ulcerative endocarditis is naturally affected by the complications, such as croupous pneumonia,² and the typhoid type of temperature may at times suggest the diagnosis of typhoid fever, just as a similar chart in multiple hepatic abscess suggests the same thought; but the irregular temperature, possibly the sweatings, the early typhoid state, and the general want of conformity to the well-defined picture of typhoid fever, suggest the differentiation, and it might be added that rigors rarely occur in typhoid fever, but are common in endocarditis. The remittent or typhoid temperature with moderate febrile movement (*i. e.*, one or two degrees) is often observed in those cases in which the recent malignant endocarditis is engrafted on the subjects of chronic valve disease,³ but even in these cases the morning temperature is often 98°, and the duration of this phase of temperature may be very prolonged. Dr. Green refers to a case which

lasted six months, and to another in which during eighteen months there were attacks of irregular fever. Osler writes, "I have noticed the febrile symptoms subside for weeks, to recur again with increased severity, and there are cases which render it probable that the process may subside entirely, or the temperature may be sustained at 102° to 103° till the end of the case."¹

It would, therefore, appear that the peculiarities of temperature in ulcerative endocarditis afford very valuable grounds for diagnostic deductions, the most extensive and destructive atheromatous changes can occur without elevation of temperature, but withal Dr. Sansom² has referred to a case of ulcerative endocarditis in which there was no elevation of temperature throughout. The study of the compensative hypertrophy seems to me of decided value from the diagnostic standpoint. In the case I have reported we have presented a temperature with the foregoing characteristics, with an aortic murmur, but without the signs of compensative hypertrophy which should accompany a chronic lesion. The enlargement of the spleen noticed in the case I have reported is frequently observed, especially if the alternations in temperature are extreme. Pain, palpitation, or subjective cardiac symptoms may be present, but the process is often latent.

In a case of valvular heart disease with the temperature described occurring without association with rheumatism, and with the history of an acute illness, the diagnosis of ulcerative endocarditis is strongly suggested. Even in cases of chronic valve lesions the outbreak of fever with rapid disturbance of the balance of a previously perfect compensation without rheumatic history, presents the same suggestive diagnostic features. The probabilities in favor of the diagnosis of ulcerative endocarditis would be strengthened if evidences of embolism in the various viscera, especially in the pulmonary circuit, occur, or if cerebral symptoms are added to the picture.

CONGENITAL TUMOR OF THE RECTUM.

BY W. H. HAYNES, M.D.,
OF NEW YORK.

IN vol. 26, page 584, of the *Medical Record*, there is reported the following case of *congenital hemorrhoid*, perhaps due to an inherited predisposition or maternal impression, and of an external variety.

"A female child was born of healthy parentage. The mother, a primipara, had always been the picture of health excepting chronic constipation, and its natural result hemorrhoids, which have been many years a source of torment to her, and was naturally extremely aggravated by pregnancy. The child, otherwise well formed, presented at the verge of the anus on the right side a fold of skin projecting three or four millimetres from the normal level of the epidermis, and five millimetres long by three broad. This is covered with healthy normal integument of natural color and sensibility. It is then an *imitation* of a pile just where the mother's most annoying tumor was located. The little tumor seems to be merely an excess of skin at that point, and is in color and texture so like healthy skin

¹ Lancet, 1880.

² Guitéras, Med. News, Nov. 14, 1885.

³ Bramwell, Diseases of Heart, Edinburgh, 1884.

¹ Gulstonian Lectures, 1885.

² Lancet, vol. i. 1884.

as to show that it cannot be the result of inflammation. The mother was very anxious to know if her baby 'had piles,' and said she had been praying for months that her child might be spared an affliction which had caused its mother so much suffering."

I now take the opportunity of reporting a case of what may be termed an example of the internal variety of congenital hemorrhoids.

Mrs. H. was delivered of her second child, a female, which, on the day of its birth, was noticed to have hanging from the anus, at each stool, a globular tumor about the size of a small cherry-stone. It was dark red in color, and suspended by a short pedicle from just above the muco-cutaneous border of the anus within the rectum on its right side. No hemorrhage attended its appearance, and it was semi-solid to the touch. It was seized with a pair of forceps, which caused slight bleeding. A silk ligature was tied around the pedicle at its base. On the morning of the third day after this, the tumor fell off during a stool, and was thrown out with the excrement contained in the diaper. When I saw the child a few days later there was nothing unusual to be noticed about the anus, except a little point of ulceration just within its border, at the seat of the former location of the tumor. There was no reason to suspect any predisposing influence other than that the mother was afflicted with internal hemorrhoids.

I have nowhere been able to find a case recorded similar to either of the above.

Objections may be raised to the term *congenital hemorrhoids*, yet it certainly succinctly describes both the conditions found, better than any other that could be mentioned, although it may seem inconsistent to name a congenital growth after a disease, though they resemble each other in every respect except as to cause. It may be thought that the last was a case of polypus of the rectum; as to that, I would mention that its location and appearance were certainly not those of the soft gelatinous polypi met with in children, nor of the hard fibrous variety of tumor found in adult life, but it resembled more than anything else what is erroneously termed "hemorrhoids or piles," and which is found in both young and old.¹

In neither case were the contents of the tumors noted. Both patients were females.

As to any predisposing or maternal influence, I would rather not speculate, as the observations are too few, and we are yet in the dark regarding the workings of nature in this direction.

HOSPITAL NOTES.

NOTES FROM THE PARIS HOSPITALS.

(Specially reported for THE MEDICAL NEWS.)

LOBULAR PNEUMONIA; SEPTICÆMIA; DEATH.

M. HARDY recently gave an interesting clinical lecture, at the Charité Hospital, on a case of lobular pneumonia followed by septicæmia, and finally death. The patient was sixty-four years of age, and he had never previously been seriously ill. During eight days before he entered

the hospital he had been ailing—a pain on the right side of the chest and a cough. Nevertheless he continued to work up to ten days before his admission. When he was admitted he coughed a great deal; his sputum was viscous but not abundant. Sibilant and subcrepitant rhonchi were heard on both sides; the temperature varied from 102.2° to 104° F., and the pulse beats were from 100 to 110 per minute. The symptoms were somewhat contradictory; they indicated tracheo-bronchitis, and the stitch in the side was symptomatic of another condition. Fever increased, also the pulsations, from 110 per minute to 116; the patient was excessively prostrated, the eyes were bright, and the stitch in the side intensely painful. The sputa did not present the coloration peculiar to pneumonia, they were of a greenish-yellow color, but their consistency was that of the sputa of pneumonia. On auscultation subcrepitant rhonchi were heard in the right armpit; in the subscapular region bronchophony was detected. On percussion there was decided dullness. Respiratory vibrations were heard below the souffle and the sibilant rhonchi; they were also present on the left side. Bronchitis was diagnosed, complicated with lobular pneumonia of the right side. The patient was dry-cupped and a Todd's potion administered. The stitch in the side disappeared, but on the fifth day after the patient was admitted (March 13) the temperature was 104° Fahr., and the pulse beat 120 to the minute, all the other local symptoms remained—dullness, souffle. M. Hardy ordered a full dose of tartar emetic every two hours, and directions were given to the nurse to discontinue the dose after three attacks of vomiting or three motions, or after three times vomiting and one motion. The last condition was realized and the emetic was no longer administered.

The patient considerably improved. His temperature fell to 102.4°, and the pulse to 110; local symptoms were also favorably modified, and the crepitant râles were changed to mucous râles. The improvement was maintained during two days; on the third fever returned, the temperature was 100.5° to 104°; on the fourth it rose to 105.9° in the evening; the patient was physically distressed and slightly delirious. He was carefully examined but no fresh symptoms were detected, no indications of a recurring pneumonia; the sputa were not viscous as at the onset of the malady, and only a slight dullness remained.

On the sixth day after the temporary improvement in the patient's condition, the prognosis was most serious; the morning temperature rose to 104.1°, the pulse 174 to the minute. Neither auscultation nor percussion revealed any indications of a return of pneumonia. The patient died the same night, twelve days after his entrance and twenty days after the actual onset of his illness.

The necropsy revealed the following condition: extreme congestion of both lungs, several patches of hepatization in the central region of the right lung. The spleen was considerably enlarged and diffuent, as in septicæmia; the kidneys enlarged and congested, resembling those in infectious nephritis; the liver likewise was much enlarged, presenting small detached patches of fatty degeneration; the gall-bladder contained three large green calculi. During lifetime the patient's skin was slightly jaundiced. The mitral valve of the heart was slightly altered, but that was evidently of long standing.

¹ Allingham, fourth Amer. ed., p. 52.

Thus the necropsy revealed all the characteristics of septicaemia. Death resulted from a general condition impossible to account for, and perfectly independent of the pulmonary affection. The patient was a bootmaker, a calling which does not throw any light on the etiology of his infectious condition, resulting in death.

Fatal Pneumonia attacking Husband and Wife; Pneumococci detected.—Alphonse and Marie P. were both servants at the Pitre Hospital; they had been there during four years; the husband had never been ill; Marie had been ill with quartan intermittent fever, with lung complications. Their bedroom was small but airy. Marie was suddenly seized with shivering fits and a stitch in the left side; she was very feverish; there were sibilant and loud râles on both sides of the chest; at the base of both lungs subcrepitan râles; in the armpits small subcrepitan râles; her voice had been excessively hoarse for three days. Eight days before her illness she complained of feeling ill, of having pains all over her; she had a bad cold in the head, and was in the sixth month of pregnancy. The diagnosis was influenza, with pulmonary congestion on the right side. Pregnancy explained the dyspnoea, which greatly distressed the patient. Todd's potion was prescribed and dry cupping.

The patient passed a good night. The next morning she was much better, but her husband, Alphonse, was seized with a shivering fit which lasted two hours; he had a burning, hot skin, temperature was 104.7° , and he complained of a constant pain in the left side; no cough, no expectoration; it was impossible to diagnose the acute affection from which the patient was suffering. The next day symptoms of pneumonia declared themselves, these became more and more serious, and the patient died on the fourth day of his illness.

Marie, the wife, was delivered of a seven months' child two days after she was taken ill. The child lived, and the mother continued to suffer from dyspnoea, and exhibited symptoms of bronchitis; she died four days after her confinement, the fifth day of her illness.

The treatment consisted of full doses of alcohol, dry cupping, and bromhydrate of quinine. A necropsy was not allowed by the relatives. The rapid and serious character of the pneumonia remains unexplained. The sputa contained numbers of Friedländer's lanceolate encysted microbes.

MEDICAL PROGRESS.

A HYGIENIC SCHOOL DESK.—DR. PRIESTLEY SMITH has devised a hygienic school desk which he describes in the *Ophthalmic Review* for June, 1886. The requisites for such a desk he formulates as follows:

1. The seat must be of such height as will allow the scholar's feet to rest flat upon the floor or footboard, and broad enough to support the greater part of the thigh.

2. The seat must have a back placed at such height as to fit the hollow of the back below the shoulder blades, and support the body in a vertical position.

3. The near edge of the desk must be just so high above the seat that when the scholar sits square and upright with elbows to the sides, the hand and forearm may rest upon the desk without pushing up the shoulder.

4. As used in writing, the desk must have a slope of

10° to 15° (about 1 in 5); as used in reading, it must support the book at an angle of about 45° , and at a distance of at least twelve inches from the eyes—sixteen inches is better (30–40 centimetres).

5. As used in writing, the edge of the desk must overhang the edge of the seat by an inch or two, in order that the scholar shall not need to stoop forward, and that the support to the back may be maintained.

6. Either the desk or the seat, or some part thereof, must be movable at pleasure, so that although the desk usually overhangs the seat the scholar may be able at any time to stand upright in his place.

7. The desks and seats must be of various sizes, in order that the foregoing conditions may hold good for scholars of various ages.

ON THE PLACE OF ORIGIN OF URIC ACID IN THE ANIMAL BODY.—In a paper read before the Royal Society, June 10, 1886, by ALFRED BARING GARROD, M.D., F.R.S., and reported in the *Chemical News*, the endeavor of the author has been to show the place of origin of uric acid in the animal body, and to ascertain which of the two hypotheses on the subject is correct, viz., whether uric acid is first present in the blood, and then secreted from the blood by the kidneys, or whether it is formed by the kidneys themselves. To enable him to prosecute satisfactorily many of his observations, the author has devised a new method for discovering the presence of uric acid in very minute quantities of blood.

The results of his investigations are embodied in the form of the nine following propositions:

Prop. I. Uric acid is secreted by the kidneys as ammonium urate; and in the case of birds and reptiles, whose urine is semi-solid, it is found in a definite physical form, more in the vitreous condition than in the truly crystalline shape.

Prop. II. Uric acid, when present in the blood, is found under the form of sodium urate; and, when deposited from the blood during life in any tissue, it is also as sodium urate in its characteristic crystalline form.

Prop. III. The quantity of uric acid daily secreted by different animals in relation to their body weights varies extremely. In some, as the carnivorous mammalia, the ratio may be less than 1 to 1,000,000, whereas in others, as birds, it may be as 1 to 85. In man it may be regarded as about 1 to 120,000.

Prop. IV. The quantity of uric acid contained in the blood of different animals has little relation to that secreted by the kidneys. In birds, secreting daily so large a quantity, the blood is often found to be as free from uric acid as it is in animals whose daily elimination of uric acid is excessively small.

Prop. V. When uric acid is absorbed from the alimentary canal, the blood becomes strongly impregnated, and, in fact, often almost saturated with it, so that its presence is readily discovered by any ordinary test.

Prop. VI. One cause of the appearance of an unusual quantity of uric acid in the blood of birds in health is the presence of uric acid in the water they drink, and occasionally in their solid food.

Prop. VII. When uric acid is taken into the stomach of man or other animals, the secretion of this principle from the kidneys is not increased, although at the time the blood may be rich in it.

Prop. VIII. Uric acid is found in varying quantities in the blood obtained from different veins in the same animal. It is found in larger quantity in that from the efferent renal veins than in that from the portal afferent, or from the jugular veins; and the same test which freely exhibits uric acid in the blood from the former often fails to show it at all in that from the latter two.

Prop. IX. The quantity of uric acid secreted daily by the kidneys of a bird is in close relation to the quantity of nitrogenized food taken during the time.

Having brought forward proofs to confirm these propositions severally, the author draws the following conclusions, viz., that every argument is in favor of the hypothesis that uric acid is formed by the kidney cells, in the form of ammonium urate, and that the traces of sodium urate found in the blood are the result of a necessary absorption, slight in amount, of the ammonium urate from the kidneys into the blood, and its subsequent conversion in that fluid into sodium urate.

RESECTION OF THE RIB FOR GANGRENE OF THE LUNG AND EMPYEMA.—DR. K. SNELLEN, of Zeist, in Holland, having a case of pneumonia, which was followed by gangrene of the lung and empyema, aspirated, deferring opening up the cavity of the pleura for a few days. A fluctuating tumor being detected at the spot where the aspirator had been introduced, resection of the sixth rib, by the subperiosteal method, was performed, four centimetres being excised. When the pleural cavity was opened, an immense stream of extremely offensive fluid came away. The cavity was washed out, through a male silver catheter, with a three per cent. solution of boracic acid, and afterward with a one per cent. solution of chloride of zinc, the wound being covered with Lister's dressing. For the next two days the patient's condition was very much improved, but on the third day after the operation the temperature rose to 104.2° Fahr., and erysipelas of the face set in, which extended over the head and neck, the patient succumbing on the eighth day after the operation. It seems uncertain whether the gangrene was the direct cause of this erysipelas. The writer is disposed to think that in these cases it is better not to resect very early, but to aspirate first, so as to relieve pressure on the lung, and then, after waiting a short time for the patient's condition to improve, to evacuate and wash out the cavity. German literature on this subject is scanty. Schneider, of Königsberg, had a successful case of resection of the rib for gangrene, but the latter was of traumatic origin, being due to a gunshot wound, and therefore was less likely to be associated with so unhealthy a constitutional state as the present case, which was due to pneumonia. Dr. Snellen also suggests the practicability of repeated aspirations.—*British Medical Journal*, July 10, 1886.

IODOL IN OCULAR THERAPEUTICS.—From considerable clinical and experimental experience A. TROUSSEAU concludes that iodol is readily tolerated by the eye; that it may sometimes advantageously replace iodoform; that it ameliorates and sometimes cures ulcerative blepharitis, chronic conjunctivitis, and certain forms of vascular keratitis. It has been shown to be efficacious in phlyctenular keratitis and torpid ulcers of the cornea. In solution it favorably modifies granulations.

Trousseau, in this connection, recommends the following formulæ:

1. Vaseline	5 parts.
Iodol	1 part.
2. Iodol	3 parts.
Alcohol	35 "
Glycerine	62 "

The pain resulting from the application of the solution is comparable to that caused by the ophthalmological use of nitrate of silver or sulphate of copper, and is chiefly due to the alcohol.—*L'Union Médicale*, May 22, 1886.

A STUDY OF THE THYROID.—In an experimental research on the blood-forming organs and blood-formation in the *Journal of Anatomy and Physiology*, for July, 1886, DR. JOHN LOCKHART GIBSON summarizes as follows, the results of his experiments on the thyroid body:

1. That the thyroid has, properly speaking, no blood-forming function.
2. That any blood-forming action it may in some animals seem to have is due only to the presence of lymph-follicle-tissue in the thyroids of such animals.
3. That its function is in no way compensatory to that of the spleen.
4. That in dogs the total removal of the thyroid is always followed by death, after a definite train of nervous symptoms.
5. That in dogs the presence of unusually well developed aortic thyroid glands may prevent the onset of the symptoms.
6. That the removal of the whole thyroid from the human subject is unjustifiable, such removal being always, after a varying interval, followed by the development of the very serious definite condition called "cachexia strumipriva."
7. That in all excisions of the thyroid from the human subject at least a small piece should be left, a small piece appearing to be sufficient for the carrying on of the essential function of the gland.
8. That the function of the thyroid has special relation to the central nervous system, though what the true nature of such relation may be has yet to be definitely determined.
9. That myxœdema, cachexia strumipriva, and cretinism are probably one and the same disease, and are due to virtual or actual absence of the thyroid.

OLFACTION.—ARONSOHN (*Du Bois's Archiv*, 1886, Heft 394) has made a long series of experiments upon this subject in man. He found:

1. That the olfactory nerve was completely blunted for a time through the uninterrupted action of an adequate irritation in the course of a few minutes.
2. Completely exhausted olfactory nerves need at least a minute for complete recovery.
3. Different kinds of odors affect different territories of the olfactory region; one territory is excited to a maximum degree, a second territory in a lower degree, and a third territory not at all.—*Journal of Nervous and Mental Disease*, June, 1886.

APPLICATIONS OF GLYCERINE IN THE TREATMENT OF SIMPLE ULCER.—DEMARQUAY speaks highly of

the following mixture as applied to simple indolent ulcer:

Glycerole of starch 5 parts.
Sulphate of alumina and zinc . . . 1 part.

Where the ulcer is painful he uses a dressing thus composed:

Sydenham's laudanum 4 to 5 parts.
Glycerine 100 "

Such dressings are found to be of advantage whether the ulcer be scorbutic, scrofulous, or syphilitic.—*L'Union Medicale*, No. 55, 1886.

ON VAGINAL EXTIRPATION OF THE UTERUS.—DR. BRENNECKE, in the *Zeitschrift für Geburtshülfe und Gynäkologie*, vol. xii. part i., states that he has removed the entire uterus through the vagina for cancer eighteen times, without a single death. His first principle is to make the parts as accessible to the surgeon's hand as possible throughout the operation. For this purpose he has devised a special uterine clamp-forceps, which takes up little room, and grasps the tender and friable uterine tissue firmly, yet safely. He takes special precautions against hemorrhage. He carefully cuts through the upper reflexion of the vagina, in front and behind, with a short-bladed knife, shaped like Küchenmeister's, and separates the cervix from the loose surrounding cellular tissue. Then he isolates the denser tissue on the sides of the cervix, bearing the uterine artery and its branches. The operator then grasps the uterine appendages. Each appendage is ligatured by means of a strong S-shaped needle, resembling that devised by Olthausen, which introduces the thread with comparative facility. The uterus is then strongly retroflected, and pressed closely against the posterior wall of the vagina: by this manipulation the vesico-uterine fold of peritoneum is most readily separated without injury to the bladder. An elastic ligature is then applied to the broad ligaments, and they are cut through. Dr. Brennecke neither drains Douglas's pouch, nor applies any suture to its divided serous surfaces. An iodoform-glycerine plug sufficiently protects the escaping discharge from septic changes. After six or seven days the plug is removed, and the vagina is simply irrigated. Dr. Brennecke prefers total extirpation to amputation of the cervix, and even advocates vaginal extirpation for other incurable uterine diseases, in preference to abdominal section or oöphorectomy. His monograph is of great importance, and his method of operating can only be thoroughly understood by a perusal of the same. It need hardly be added that statistics of after-histories are even more important in this case than after ovariectomy and myomectomy. The most dexterous operator might, physically speaking, cut away a cancerous growth, the limits of which are tangible, if not visible, on a breast, removing an infinitely small area of healthy tissue around the growth. We know that he does not do so, but cuts very freely, and is able to use the knife boldly, thanks to the anatomical relations of the breast. In the case of the uterus, the greatest dexterity may fail to remove all the cancerous tissue, especially if it have spread to the connective tissue round the cervix, and cutting freely is out of the question; nor can the finger always

detect the extension of the disease. This must never be forgotten when any operation on a cancerous uterus is contemplated.—*British Medical Journal*, July 10, 1886.

DRUNKARD'S EPILEPSY.—In view of Magnin's assertion that in France the frequent cases of epilepsy occurring in drunkards are due, not to alcohol but to absinthe, MOELI has reviewed the German statistics of the subject which may be thus summarized:

In Germany 36 to 40 per cent. of the subjects of delirium tremens are also victims of epileptic attacks. An attempt to determine whether the occurrence of such attacks was correlated with the abuse of any special kind of distilled liquor was unsuccessful, but it was found that in twenty-six almost exclusively beer and wine drunkards only one was epileptic.—*Centralblatt für klin. Med.*, No. 11, 1886.

GUNSHOT WOUND OF HEART; PATIENT SURVIVED FORTY-TWO HOURS AFTER INJURY.—SURGEON G. F. NICHOLSON, M.D., of Peshawar, India, relates the following case: Poor Dil, a resident of Bahadur Killi, a short distance from Peshawar, was shot through the chest about 9 o'clock on the night of the 9th of March, 1886; he was brought to the Egerton Hospital at 6 o'clock the following morning, and was then almost pulseless, had extreme difficulty in breathing, and occasionally coughed up blood. Shortly after admission to hospital he rallied slightly; but remained very low till death took place at 3 o'clock P.M. on the 11th of March.

There was a circular wound on the posterior fold of the left axilla, half an inch in diameter, and evidently leading to the lung, blood and air escaping through it. The bullet, a round one, was felt on the right side of the chest immediately underneath the skin, and was extracted through a linear incision; through this wound too blood and air escaped. On post-mortem examination the course of the bullet wound was found to be as follows: Through the seventh rib on the left side, some pieces of which were found in the left lung, then through the left lung, left and right auricles of heart, through the right lung, and finally through the fifth intercostal space on the right side. Blood was found in large quantities in both pleural cavities, and about one ounce of blood stained serum in the pericardium. There were two long rounded blood clots extending from the wounds in the right and left auricles into their corresponding ventricles; the lower portions of these clots were almost quite white.

That a man should live over forty hours after such a grave injury is very remarkable and important in a medico-legal point of view. Bryant mentions a case recorded in Circular No. 3 of the War Department of Washington, in which the right auricle was wounded, the patient surviving fifty hours.—*Indian Medical Gazette*, May, 1886.

HOW TO COOL A CELLAR.—A great mistake is sometimes made in ventilating cellars and milk houses. The object of ventilation is to keep the cellars cool and dry, but this object often fails of being accomplished by a common mistake, and instead the cellar is made both warm and damp. A cool place should never be ventilated, unless the air admitted is cooler than the air

within, or is at least as cool as that, or a very little warmer. The warmer the air, the more moisture it holds in suspension. Necessarily, the cooler the air, the more this moisture is condensed and precipitated. When a cool cellar is aired on a warm day, the entering air being in motion appears cool, but as it fills the cellar the cooler air with which it becomes mixed chills it, the moisture is condensed, and dew is deposited on the cold walls, and may often be seen running down them in streams. Then the cellar is damp, and soon becomes mouldy. To avoid this, the windows should only be opened at night, and late—the last thing before retiring. There is no need to fear that the night air is unhealthful—it is as pure as the air of midday, and is really drier. The cool air enters the apartment during the night, and circulates through it. The windows should be closed before sunrise in the morning, and kept closed and shaded through the day. If the air of the cellar is damp, it may be thoroughly dried by placing in it a peck of fresh lime in an open box. A peck of lime will absorb about seven pounds or more than three quarts of water, and in this way a cellar or milk room may soon be dried, even in the hottest weather.—*Scientific American*.

THE FATE OF EXTRAVASATED BLOOD.—DR. HUNTER has presented to the Scientific Grants Committee of the British Medical Association an experimental research thus entitled, of which the following *résumé* is given in *The British Medical Journal* of July 17, 1886.

The object of research was primarily to determine the share taken by the liver, the spleen, and the bone marrow, in the disposal of extravasated blood. The method of research was the transfusion of large quantities of blood into the peritoneal cavity, the blood being, in all cases, derived from an animal of the same species. The animals used were the rabbit and dog.

1. *Local Fate.*—1. The part taken by cells in the local changes going on around extravasated blood is of the greatest importance; the cells being of two kinds—those of leucocyte, and those of connective tissue origin.

2. The formation of blood-pigment from the red blood-corpuscles is mainly a "cellular" process, being effected through the agency of cells, either by inclosure of the corpuscles bodily within them, or by disintegration of the red corpuscles and then inclosure of their fragments.

3. In the process of so-called "organization" of blood-clot, both varieties of cells play an important part; but while both leucocytes and connective tissue cells are concerned in the disintegration of the red corpuscles, the former, in addition, effecting the removal of the *débris* from the seat of extravasation, the connective tissue cells alone are concerned in the process of formation of fibrous tissue by which ultimately the clot becomes replaced.

II. *Absorption.*—4. The absorption of extravasated blood applies not only to the serum of the blood, but also to the great majority of the red corpuscles which remain unentangled amidst coagula or the surrounding tissues.

5. This absorption is extremely rapid from the subcutaneous tissues, and especially from the larger serous cavities.

6. In the case of the peritoneal cavity, the absorption of the serum and red blood-corpuscles is effected almost entirely through the lymphatics of the diaphragm.

7. Under such circumstances the increase in the number of corpuscles within the circulation is observable one hour after injection, and steadily rises till it reaches a maximum about the second or third day, the time varying according to the quantity injected.

8. Extravasation *per se* does not affect the vitality of the red blood-corpuscles; if absorbed back into the circulation within a day or two, they continue to live as before.

9. Their longest duration of life under such circumstances (in the rabbit) varies from two to four weeks, this duration applying naturally to only a few of them.

10. The probable life-duration of the red blood-corpuscle in man is about three weeks.

III. *Ultimate Fate of the Absorbed Blood-corpuscles.*—

11. The three great seats of blood destruction within the body, under pathological as under physiological conditions, are the liver, the spleen, and the bone marrow.

12. The nature of the process of destruction in the liver differs essentially from that in the spleen and bone marrow.

13. In the latter, the process of blood destruction is mainly a cellular one, comparable in all respects with, although much more rapid and complete than, the similar processes taking place locally at the seat of extravasation; in the former, the destruction is much more rapid than in the spleen and bone marrow.

14. After increased destruction of blood-corpuscles within the body, the local evidences obtainable are—in the case of the liver, increased richness of its substance in iron and the presence of granules containing free iron within the liver-cells; in the case of the spleen and bone marrow, increase in the amount of pigment containing free iron found within these organs.

15. In health, a definite relation is maintained between the amount of blood destruction which takes place in the liver on the one hand, and in the spleen and bone marrow on the other.

16. Any disturbance of this relation on the part of the liver is of much greater consequence than on the part of the spleen or bone marrow.

17. The former is, in all probability, the pathological change which lies at the root of progressive pernicious anæmia; as the latter is the probable cause of the anæmia of leucocythæmia.

18. The rapidity with which blood-corpuscles introduced into the circulation become destroyed is very great, a number equivalent to about four or five per cent. of the animal's own blood being destroyed daily.

19. The small quantity of blood transfusible into the organism in the case of man is therefore entirely removed from the body in a few days at most, probably not longer than three or four.

20. Transfusion of blood in the human subject, in cases of pernicious anæmia, with the object of increasing the number of corpuscles, is devoid of all physiological basis, and is simply adding fuel to the flame, since the fault in this disease is not one of defective formation of blood-corpuscles, but one of excessive destruction of those already present.

THE MEDICAL NEWS.

A WEEKLY JOURNAL
OF MEDICAL SCIENCE.

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SATURDAY, JULY 31, 1886.

THE SPONTANEOUS RUPTURE OF TENDONS.

In connection with the subject of the treatment of divided tendons, to which we referred last week, attention may be usefully directed to the consideration of the causation of spontaneous ruptures of tendons. These, according to the classification of Volkmann, are distinguished from traumatic ruptures by the fact that they are caused by muscular action so slight as to be devoid of danger to healthy tendons. They correspond to the ruptures of muscles or bones which are caused by coughing, sneezing, or vomiting, and which are likely to occur after, or during severe constitutional diseases, such as typhoid fever, which lead to fatty or amyloid degeneration.

In otherwise healthy individuals a tendon may likewise rupture after it has been weakened at some spot by disease. In the experience of HAGER, as related in the *Berliner klin. Wochenschrift*, for May 31, 1886, teno-vaginitis, or what, in this country, is usually called tenosynovitis, is a frequent cause of such a weakening of a tendon. It would be interesting to collect some information from other sources in regard to this point, but the cases cited by Hager seem to support his opinion that chronic inflammation of the sheath of a tendon may lead to softening of the tendon itself, and make it liable to break under a comparatively slight strain. On the other hand, Hager's conception of the mechanism of the rupture of the tendon in his own and in like cases is open to criticism. He states that this occurred in his patient while he was pressing pieces of gutta-percha against a polishing wheel, the thumb being used to make the pressure, and being in a semiflexed position. This Hager understands to

involve a relaxed condition of the extensor muscles and tendons. Herein, we think, he makes a very natural mistake. In most actions of the extremities, both the flexor and the extensor muscles are in a condition of almost uninterrupted activity. By coördination the exact effect intended is produced, and neither set of muscles overbalances the other. But there are occasions when, owing to some error in the operation of coördination, one set of muscles, or one muscle, or even only a part of a muscle, may suddenly contract in such a way as to disturb the previously existing harmony, and to cause quite unexpected and unintended movements, or even lead to rupture—a subject which has been admirably discussed by MAYDL in the *Deutsche Zeitschrift. f. Chir.*, Bd. xvii. and Bd. xviii., 1882 and 1883.

Hager attempts to explain the production of spontaneous rupture of tendons by stating that contraction of a flexor muscle may stretch the tendon of an extensor so much that it will give way, while the extensor muscle is still in a state of relaxation. Herein he states a paradox. A tendon cannot be put on the stretch without stretching the muscle beyond its limit of relaxation, and a muscle so stretched will resist and contract. This may be what actually happens in such cases, and would resolve the accident to a simple rupture caused by violent muscular action, differing in no essential from a rupture of the ligament of the patella by violent contraction of the rectus femoris. In fact, it seems as if the cramp which Hager describes as coinciding with the discovery of the loss of the power of extension in his case, might be attributed to a spasmodic contraction of the extensor muscle, causing a sudden increase in the tension of its tendon, and its rupture at a weak point. In this connection, we would suggest that the chronic tenovaginitis in Hager's case may have led to the formation of adhesions between the tendon and its sheath, with softening of the tendon below this point; and that an unusual contraction of the flexors, instead of breaking up the adhesions, resulted in breaking the tendon. Such a condition as this would make Hager's explanation reasonable.

The character of the union effected by operations by anastomosis or grafting, and the share in the result to be attributed to the union of the ends of a divided tendon with the cicatrix in the skin, are not yet clearly understood. It appears, from the observations so far recorded, that the tendons do unite. In a few cases it is stated that the cicatrix moved with every motion of the tendon, and it would not be surprising if this was always the case. But this does not militate against the opinion that the tendons are united; for it would be hard to understand how they could move without carrying

the cicatrix with them. If opportunity should arise to dissect a specimen in which this operation had been successfully performed, this question would be easier of solution. At present, the evidence seems to be in favor of the view which we have expressed.

OVULATION AND MENSTRUATION.

THE dependence of menstruation upon the ovaries is admitted by most physiologists, though different opinions are held as to the nature of this relation. The view that has hitherto been commonly received, and is still held by many, is that ovulation is periodical, the growth of an ovisac and its rupture corresponding with each menstruation. As the ovisac grows it presses upon ovarian nerves, and by reflex irritation causes congestion of the internal generative organs, especially of the uterus; the uterine hyperæmia results in hemorrhage from its mucous surface. Here the question arises as to whether this hemorrhage is facilitated by desquamation of the superficial epithelium, the result of a fatty degeneration, complete casting-off of the mucous membrane being rejected. According to some, this superficial desquamation does not occur until the close of menstruation, and therefore has nothing to do with the hemorrhage. Again, excellent authorities state that they have failed to find the proof of elimination of the superficial portion of the mucous membrane in menstruation. De Sinéty, in examining the discharge during the monthly flow, could not discover the least fragment of mucous membrane or of epithelium; so, too, in women dying while menstruating, he found the uterine mucous membrane entire in all its extent. Winckel says "Since Ruge and Moricke have found that during menstruation the ciliated epithelium of the uterine mucous membrane remains intact, an observation which we have repeatedly confirmed, the earlier view that during menstruation a fatty degeneration of the superficial layers was a cause of menstruation is incorrect."

Admitting these statements, the necessary conclusion is that the hemorrhage in menstruation occurs without destruction of any part of the uterine mucous membrane, and that the blood escapes from the superficial vessels, not by their rupture, but by diapedesis and through an intact mucous membrane.

The periodicity of menstruation can be most readily explained by attributing it to the ripening of an ovisac, for this, like other processes of growth, would naturally be supposed to require a certain time. Again, this interpretation of the connection between ovulation and menstruation corresponds with what we know of ovulation and "rut" or "heat" in animals, which is the analogue of menstruation. Nature's legislation is general rather than special, and it is not probable she would make one

law relating to reproduction for animals in general, and then a special law for human beings.

But without pressing this point, let us see the proofs that are adduced to show that ovulation is not periodical. The results of Leopold's investigations are thus given by FOEKTISTOW in a recent number of the *Archiv für Gynäkologie*. Fully developed follicles, those already ruptured, and fresh corpora lutea may be found at any time during the intermenstrual period. These may not be present during menstruation. Hence, ovulation occurs without menstruation, and menstruation may occur without simultaneous rupture of the follicles. Ovulation, therefore, is independent of menstruation, and is not periodical. Nevertheless, while Leopold denies the dependence of menstruation upon periodical ovulation, he does make it depend upon the ovaries, and he regards its periodicity as placing it in the category of rhythmical manifestations—e. g., the pulse, respiration, or ejaculation of semen.

The uterine hyperæmia results as a reflex from the ovaries caused, not by the ripening of an ovisac, but by the continued growth of several. Foekistow, in answer to the question, why does not menstruation occur more frequently, gives these reasons: Comparatively slight ovarian irritation is not sufficient to cause a reflex so soon. The essential, too, of the menstrual process is that anæmia follows hyperæmia, and irritability ceases. Equilibrium is thus restored, and to cause another reflex another sum of irritations is necessary, and these cannot occur at once. The changes in the uterine epithelium which began with the hyperæmia, pass away with the following anæmia, and the epithelium returns to its normal condition, a process which occupies more than one-half of the intermenstrual period.

Another theory of menstruation which is founded upon ovulation, is that of Lowenthal. According to him, the ovule reaches the uterus before impregnation; if it be impregnated, menstruation does not occur, but if it is not impregnated, it excites a uterine congestion which ends in hemorrhage. Winckel observes that the Achilles' heel of this bold hypothesis is that the death of the ovule can cause active congestion of the uterus. Further, this hypothesis is a revival of an old one—that is, menstruation results from the failure of impregnation, and is entitled to no more credence in its new than it was in its old form.

It may be, as stated by de Sinéty, that any positive theory of menstruation is, with our present knowledge, premature; nevertheless, it must be admitted that this function is connected with the ovaries, for if these organs are congenitally absent, or if they are undeveloped, menstruation does not occur. So, too, after double ovariectomy menstruation ceases. The exception to this rule cannot be

admitted until a careful post-mortem examination has proved that no fragment of ovarian tissue has been left behind in the lower portion of the pedicle, as has happened in some cases. Women have borne children after both ovaries were believed to have been removed. Olshausen performed, as he thought, ovariectomy; but the result being fatal, he found at the autopsy that neither ovary had been removed. Further, even if both ovaries have been completely removed, possibly there may remain a supernumerary ovary, a condition that Beigel's and Winckel's examinations prove to be far less rare than has been thought. Beigel found in 500 sections supernumerary ovaries 23 times; and Winckel has concluded, from his own examinations, that supernumerary ovaries are present in 3.6 per cent. Until in those cases of alleged normal menstruation, as stated by Foekistow, post-mortem examinations prove the entire absence of all ovarian tissue, the doctrine that menstruation depends upon ovarian action, will remain. So, too, it is in the highest degree probable that there is an intimate connection between ovulation and menstruation. At the same time it must be admitted that the two may be distinct, the one occurring without the other, though they are usually associated. Thus there may be occasional menstruations without ovulation, or the latter may occur without the former. Ovulation may begin before the first monthly flow and impregnation take place; during lactation it may occur without menstruation, and it may happen, too, after the menopause.

A FRENCH OPINION OF NITROUS OXIDE.

It is said that ideas travel slowly eastward, and this seems to be the case in regard to the use of nitrous oxide as an anæsthetic. In this country it is administered by dentists at almost every cross-road, and so freely—we might say recklessly—that it seems fair to infer that its inhalation is without danger. In France, it appears, its benefits are almost unknown. A recent article by AUBEAU, which appears in *l'Odontologie*, for Dec. 1885, and Jan. and May, 1886, is devoted to a mild defence of its employment by dentists. A detailed account is given of its use in 20 out of 58 cases of tooth extraction, in all of which the urine of the patient was examined carefully after the operation, without the detection of a trace of sugar.

The number of the same journal for May, 1886, contains an interesting article by HUGENSCHMIDT, a recent graduate of the Dental Department of the University of Pennsylvania, in which an excellent account is given of the free way in which nitrous oxide is used in the United States. In contrast to the few cases studied by Aubeau, Hugenschmidt mentions three American dentists who have administered the gas more than 300,000 times, and describes very well

the method of its administration in this country, which has been so brilliantly successful. All this, however, seems too much for Aubeau, who adds to his *confrère's* article a note, in which he says that he can neither imitate nor approve the audacity of our countrymen, although their experience shows that "the use of nitrous oxide does not involve very formidable dangers." This conservative opinion does more credit to the prudence than to the enterprise of our French brethren, who seem to need just such information as is furnished in our American schools of dentistry, and as can be gathered from observation of the general practice in this country.

TAMPERING WITH THE QUARANTINE LAWS.

NOTWITHSTANDING the provisions for the closest scrutiny of vessels entering the Delaware, a case of deliberate infraction of the quarantine laws has taken place which wellnigh escaped detection. The captain of the Norwegian brig, "Grid," who permitted agents of a commission house to board and remain on his vessel in violation of law, and denied the act at the official inspection at the Lazaretto, deserves more than a reprimand. His prompt conviction before the court and the imposition of a fine and the payment of the costs of prosecution were fully merited.

The fact that the vessel was free from cases of sickness does not modify the gravity of the offence. The law distinctly prohibits all intercourse with vessels before an investigation by the Lazaretto officials, and unless it is rigorously enforced quarantine regulations are little more than a farce. It is to be hoped that this example of the vindication of the law will encourage its officers to renewed vigilance, and hereafter deter officious persons from tampering with the health regulations of the port.

REVIEWS.

ORGANIC MATERIA MEDICA AND THERAPEUTICS. By JAMES YOUNG SIMPSON. Small 8vo. pp. 350. New York: J. H. Vail & Co., 1885.

THIS little book of 350 pages contains much to commend, and little to condemn. It essays to give a concise and condensed idea of the origin, natural order, habitat, synonyms, solubilities, preparations, general physiological and therapeutic action of each organic drug in the materia medica. In some instances the chemical tests and toxicology are also added. It embodies an account of a number of therapeutic agents which occupy a very prominent position in the armamentarium of some of our ablest practitioners, but which are only noted for their absence in our standard and more pretentious works on therapeutics. It is clear that our indigenous remedies merit a more prominent position than they at present occupy, and it is, therefore, pleasing to find many of them discussed in the general plan of this work. Among the most noteworthy of this class will

be found apocynum, bryonia, calendula, cannabis Americana, castanea, chimaphila, gossypium, phyto-lacca, pulsatilla, rhus glabra, salvia, sambucus, viburnum, etc. It contains some valuable hints on hypodermatic medication, and, with a few exceptions, it is brought down to the present time, and fulfils the aim of a work written "for ready reference on the organic materia medica." For the teacher it is as well adapted as for the student.

SOCIETY PROCEEDINGS.

THE AMERICAN OTOLOGICAL SOCIETY.

Nineteenth Annual Meeting, held at New London, Conn., July 20, 1886.

(Specially reported for THE MEDICAL NEWS.)

MORNING SESSION.

THE PRESIDENT, J. S. PROUT, M.D., of Brooklyn, called the Society to order.

DR. S. SEXTON, of New York, read a paper entitled

ACUTE AND CHRONIC PURULENT INFLAMMATION OF THE MIDDLE EAR TRACT, AND THEIR COMPLICATIONS.

It was based on the records of 2366 cases, which were divisible into three classes: acute purulent inflammation of the middle ear (739 cases); acute catarrhal inflammation of the middle ear (245 cases); and chronic purulent inflammation (1382 cases). The consideration of acute catarrhal inflammation was included in the consideration of acute purulent inflammation, since in the beginning the conditions were probably the same, although not always going on to suppuration. Out of this series of cases, 131 were selected on account of their gravity. Of this number, there were 12 deaths.

In no disease of man is a knowledge of regional anatomy more important than in disease of the middle ear. The speaker then gave a thorough *résumé* of the anatomy of the temporal bone, accepting the description of Prof. Leidy as the most satisfactory. The temporal bone at birth is peculiar, in the fact that the tympanum and mastoid antrum are about as large as they ever become in adult life. The petroso-squamosal suture is imperfectly closed.

The symptoms were next referred to. Brain symptoms, such as headache, vertigo, pain, delirium, nausea, and vomiting may occur, in consequence of middle ear disease without lesion of the cerebral structure.

The prognosis of purulent inflammation of the middle ear is favorable when non-meddlesome treatment is adopted, both as regards life and the preservation of hearing. Out of 20,000 cases of ear disease, where the patient had been seen at the beginning of the attack, no fatal case has occurred. Cases which have come under observation after severe symptoms have appeared have given 12 deaths. Some of the fatal cases occurred long after the ear trouble had abated.

In regard to treatment, he recommended incision of the drum-head. Trephining of the mastoid process has been advised by some authorities. Dr. Sexton took up a consideration of the indications which have been regarded as calling for the application of the trephine, and held that they were insufficient. From his experience he was led to believe that drainage could be best maintained through the natural channel.

DR. SEXTON also described

A NEW OPERATION FOR THE RADICAL CURE OF CHRONIC PURULENT INFLAMMATION OF THE MIDDLE EAR TRACT.

Since describing a form of chronic purulent inflammation of the attic in a paper read before the Society last year, it had occurred to him that something might be done with these cases by means of an operation. It seems especially desirable to cure these cases, when the ear remains simply a reservoir for purulent matter, liable at all times to infect the system. It is found, in the greater number of these cases, that the remaining portion of the conducting mechanism no longer serves to aid in the transmission of sound, but acts rather as an obstruction to drainage. Where the membrana flaccida and a portion of the ossicular chain only remain, the former often becomes thickened and everted, forming with the altered mucous membrane a pouch for the retention of putrescent matters which may slowly escape. Where granulation tissue or polypoid growths are present in the attic or antrum, the escape of secretions is still further interfered with. This produces long-continued and great irritation.

The author has observed that in a number of cases where the transmitting mechanism had been lost, a spontaneous cure followed; and it occurred to him that the curative action of nature might be imitated with advantage. Where drainage from the attic and antrum is interrupted, a cure can only be assured by an operation permanently clearing the passage outward from the tympanum.

Last year the operation was tried on a long-standing case of otorrhœa, due to chronic purulent inflammation of the attic. In order to avoid the danger of using an ordinary lamp in connection with the administration of ether, an electric light was used. The operation has since then been fully performed in several cases.

The first step of the procedure is to separate the membrana flaccida from the edge of the auditory plate and to remove any portion of the membrana vibrans adherent to the auditory ring. If the malleus and incus remain *in situ*, it is well to divide the tendon of the tensor tympani muscle when present, where it leaves the handle just behind the short process and below the chorda tympani. The chorda tympani, when remaining, is then divided where it enters the tympani at the pyramid and also at its exit into the canal of Huguier. The long process of the malleus, being also received into the glenoid fissure by means of this short oblique canal, along with the chorda, may be more or less detached at the same time. The detached tissues and ossicles should now be removed with the forceps. It will frequently be found that the incus, having been displaced, still remains. It may be removed with the attic scraper, which is to be introduced from below and passed up along the inner wall of the tympanum, when the distal extremity may be carried over the incus or malleus, if the latter bone remains, and by traction the ossicles can be detached. Polypoid masses, granulation tissue, and the products of inflammation may now be removed with the cutting curette or cutting forceps, and the parts dressed with a four per cent. solution of cocaine to relieve pain. There is usually free bleeding during the operation, often sufficient to protract it and increase its difficulties.

The effect of injury or destruction of the chorda tympani nearly always manifests itself in some way, but had never, in his experience, been a matter of serious import. Disturbances of taste sometimes follow the operation, but they gradually disappear and leave the sense of taste unaffected.

The drum should be well cleansed, and light dressings of boracic acid applied until healing takes place. The salicylic acid powder may be applied as freely as can be borne. In some cases this is irritating at first, but tolerance is soon established. It may then be kept up until the parts cease to discharge.

In the cure resulting from this treatment, a dermic transformation of the tympanum takes place; but mucus may occasionally gain admission from the Eustachian tube during recurrent head catarrh or on blowing the nose. This should be frequently removed with cotton-wool, and, if necessary, the drying applications renewed for a time. Where the incuso-stapedial connection remains he should not hesitate to perform this operation, unless a very considerable portion of the membrana vibrans is present. The instruments employed and some of the diseased ossicles removed were exhibited.

DR. C. R. AGNEW, of New York, said that he inferred from the speaker's remarks that he objects to the opening of the mastoid.

DR. S. SEXTON replied that he never had any difficulty in obtaining drainage in cases of periotitis externa by a free incision with a small tenotomy knife.

DR. AGNEW held that where the inflammation involves the mastoid cells, some portion of the external wall of the mastoid should be removed. The objection to the trephine is that it does not expose a sufficient area of the cancellated tissue of the mastoid. He did not see how the new operation which had been described will be of service in these cases.

DR. SEXTON said that the new operation was recommended in only chronic cases.

DR. H. KNAPP, of New York, said that the upper tympanic pneumatic cells resembled, to a certain degree, the frontal sinuses. They have a direct natural drainage through the infundibulum into the nose. When this is closed by disease, the lateral part of the sinus over the orbit dilates and the cavity is more easily reached and more effective drainage is obtained by opening the sinus from the orbit. In a like manner, we obtain in most cases easier and more effective drainage of the supratympanic cells by opening the mastoid cells with which they communicate.

DR. A. H. BUCK, of New York, then read a paper on

PAINLESS AND ONLY SLIGHTLY PAINFUL ULCERATION
OF THE MEMBRANA TYMPANI, PROBABLY OF A TUBERCULAR NATURE.

Its object was to call attention to the features by which the early stage of tubercular disease of the membrana tympani could be recognized. Three cases had been seen by the author. The patients were in a condition of fair general health; one of them had disease of the vertebræ. No evidence of pulmonary disease was found in either of the three cases. Tinnitus and slight impairment of hearing were the first symptoms noticed.

In two of the cases which were examined at an early period, there were slight redness and swelling at the upper part of the membrana tympani and of the skin covering the bony wall. In a short time the infiltration extended into the entire posterior superior quadrant. The membrane became bulging and at the most prominent point a perforation established itself.

In the incipient stage, the distinguishing features are the tendency to localization in the upper posterior portion of the membrana tympani, the marked insignificance of the pain or even its entire absence and the intolerance to all but the simplest local measures.

DR. E. GRUENING, of New York, had seen a number of cases in which he was led to infer that the ulceration of the drum-head was due to tuberculosis. In one case, that of a young man, there were two openings in the inferior posterior quadrant of the drum-head. There was very little purulent discharge. The fact that there were two openings showed that the condition was not the result of perforation from accumulation. It appeared to be a melting-down process. In another case there were multiple openings, so that the membrane appeared to be honeycombed. These cases improved under treatment, but the openings remained.

DR. C. R. AGNEW had seen a number of cases which he considered to be tuberculous in character. He related the case of a young man with phthisis affecting the apices of both lungs. He stated that a short time previous he had begun to have slight ringing and a sense of dulness in the ear, that this had gone on for two or three days and then, when blowing his nose, he found that he whistled through his ear. In the ear complained of, there was an opening looking as though it had been made by a punch. The opening was elliptical. Within a few days the same thing occurred in the other ear.

DR. J. A. ANDREWS, of New York, stated that he had examined a large number of cases of middle ear trouble occurring in phthisical subjects, and some with a great deal of care, but had never found the bacillus tuberculosis.

DR. A. H. BUCK thought the failure to find bacilli did not exclude tuberculosis, for their chances of escaping detection are numerous. He had seen cases like those described by Dr. Gruening, but not in the early stages, and had, therefore, not considered them in his paper, as there was a possibility that they were due to previous ear disease.

DR. J. ORNE GREEN, of Boston, had been much interested in this paper, and recognized several characteristics which he applied to tuberculosis. The destruction coming on without pain and without discharge is very significant of the tubercular diathesis. He agrees with the speaker that in treating these cases only the very mildest measures can be used. Strong applications make the trouble worse. Twice, in cases of advanced tuberculosis, he had seen, on examining the drum membrane, little white glistening points about the size of a pin-head, not secreting at all, and in one case with no congestion. In both cases the spots disappeared in a few days, and within twenty-four hours there was a clean punched-out opening in the drum membrane. This occurred without any discharge. He attributed this to isolated tubercles in the tissue of the drum membrane.

DR. A. H. BUCK, of New York, then made some remarks on

CERTAIN TECHNICAL DETAILS RELATING TO OPERATIONS
ON THE MASTOID PROCESS.

He first referred to the objections which had been made to the drill. It had been stated that there is danger of plunging the drill into the lateral sinus, or even into the brain; he had, however, found no tendency for the drill to go astray. It had been said that the opening made was too small, but any sized drill might be used; he uses a drill one-fourth of an inch in diameter until the antrum is reached, and finishes the operation with a smaller drill. This gives a sufficient opening for drainage. When there is a large sequester, it is necessary to make a larger opening. After the use of the drill pyæmia and septic fever are rare. With a knowledge of the part to be operated upon, the drill may be used with perfect safety. It can be guided perfectly by resting the fingers on the bone. The conical shape of the drill also enables the operator to tell when its point has entered a cavity.

The objections to the use of the chisel were next taken up. When this is used the wound in the adjacent soft part must be larger, and the opening in the bone is more extensive, leading to a depressed cicatrix; more time is required in the operation, and it is not free from danger. These objections are, however, trifling, if the results of the operations are found to be more satisfactory than those following the use of the drill. A study of the statistics of both methods seems to show that there is nothing to warrant the statement that chisels and gouges are to be greatly preferred to drills in establishing opening into the mastoid process.

In operating with the drill, after making the opening, the author cuts out a little canal for the escape of the discharges, for the opening made by the drill is covered by the flap when it comes into position. For the first four or five days after the operation, the wound is irrigated once a day with a bichloride solution (one to two thousand).

Dr. Buck, in reply to a question, said that in his earlier operations he applied the drill a short distance in front of the vertical line. His present plan is different; a straight vertical incision three inches long is made; by this means he exposes the mastoid process where it curves into the meatus; the drill is then applied to the first flat surface. The only difficulty is in establishing the final communication between the canal and the antrum.

DR. J. ORNE GREEN said that he uses the drill almost entirely. He prefers to make a small opening at first, and is then guided by what is found. Some cases require a large opening, and in such cases the gouge and chisel will come into play; in the majority of cases a small opening is sufficient. In some of these cases the use of the dental engine is very applicable. He employs a modification of the engine, which may be screwed to a table; it is turned by a handle, and any one can furnish the power; no skill is required as in the engine worked with the treadle. Used in this way, the engine is of great service. The burrs can be used with the greatest delicacy. He uses a drainage tube, and keeps it in as long as possible.

DR. H. KNAPP, of New York, advocated the use of

the chisel. In his first operations he used a drill, but had abandoned it. With the chisel one can at every step observe the condition of the tissue which he is cutting; with the chisel one has a perfectly smooth surface, rendering it easier to cleanse the wound; it is also very easy to manage the chisel. The principal reason in favor of it is, however, that it enables each step of the operation to be seen.

DR. H. D. NOYES, of New York, said that there is much less danger in the use of the chisel than of the drill. There is often great difference in the anatomical relations of the parts. The lateral sinus is not always found in the same place. With the drill there is danger of perforating the wall of the sinus, or of some important vein; with the chisel or the gouge one can explore the part, layer by layer, and ascertain how the parts are situated. This is a strong argument in favor of this instrument.

DR. J. A. ANDREWS, of New York, stated that in his operations he always used the chisel, but had always begun with the drill. He believed that the chisel is the best instrument, and can be used with more caution than the drill. He always makes a large opening, for he believes that a collection of pus should always be given free vent. Instead of the ordinary drainage tube, he uses a small rubber gutter to keep away the soft parts.

DR. E. GRUENING, of New York, stated that he had opened the mastoid process seventy-seven times. At first, he used the drill, and in acute cases the results were all that could be desired. The drill is, however, not applicable to all cases and he had since used the chisel. A small opening may be made with the chisel. What can be done with the drill can be done with the chisel.

DR. A. H. BUCK, of New York, remarked that from the direction which the discussion had taken it might appear that he was in antagonism with the chisel. He was not in antagonism with the chisel in those cases where a large portion of bone is to be removed. He left those out of consideration in his paper. Where a large mass is to be removed, it cannot be removed with the drill. The two instruments cannot come into conflict.

A communication in reference to the organization of A CONGRESS OF AMERICAN PHYSICIANS AND SURGEONS, was presented and referred to a committee consisting of Dr. C. R. Agnew, Dr. H. Knapp, and Dr. John Green, to consider and report at the evening session.

EVENING SESSION.

DR. H. KNAPP, of New York, narrated the FATAL TERMINATION OF A CASE OF SCLEROSING MASTOIDITIS AFTER CHISELLING OF THE BONE.

A man aged fifty years, had extensive suppuration in both ears after scarlet fever in childhood. The right ear became totally deaf, and the left, very hard of hearing, became deaf (hearing reduced to a quantitative perception of sound) by a recent attack of dizziness. Dr. Knapp found both tympanic membranes absent, the cavities sclerosed in both, pale in the right but congested in the left ear. Behind the left ear was found a cavity fully an inch deep, lined with immovable skin, the re-

sult of former exfoliation of bone. Three weeks later facial paralysis on the left side occurred. It disappeared in two weeks, under steaming and large doses of iodide of potassium. Two weeks later, the patient suffered with constant headache and nausea. The mastoid was opened to the depth of half an inch by chiselling. The bone was compact and very vascular. During the first two days the patient was sleepy; could not be aroused on the third, and died comatose on the fifth. No autopsy was allowed.

Death was due to traumatic meningitis. In regard to opening the bone in sclerosing mastoiditis, the prognosis is good when the sclerosis is the result of catarrhal or plastic inflammation, but bad when it is the consequence of old caries or necrosis. There are cases on the border-line, and even when the prognosis is bad, the indications may be strong. The operation will rescue a certain number of otherwise fatal cases.

DR. O. D. POMEROY, of New York, reported

A CASE OF ABSCESS OF THE MASTOID CELLS IN WHICH THE CHIEF INDICATION FOR OPERATION WAS ELEVATION OF TEMPERATURE.

A. S., aged twenty years, fairly robust, had a violent attack of otitis of the right ear which came on January 30, 1886. The following morning there was free discharge. February 1 he entered the hospital, when a large perforation was found; a poultice and warm douches were ordered. By February 4 the membrane looked almost normal. There was some pain in the occiput and a temperature of 103.6°. Ten grains of quinine with twenty grains of iodide of potassium, to be repeated in three hours, were ordered. This was followed by a reduction of two degrees in the temperature. The following day the temperature again went up, and it was apparent that a purulent process was going on. There was no swelling over the mastoid, and the pain was no greater than might be expected from a neuralgic condition. After consultation it was decided to open the mastoid process. A drill was introduced and from four to six drops of pus evacuated. After the operation the patient continued to improve until he was discharged cured.

DR. J. A. LIPPINCOTT, of Pittsburg, referred to a recent case in which a similar operation resulted in failure. Something over two years ago he operated in a case of sclerosing mastoiditis which had been suffering intense pain for twelve months, and which did not yield to alterative and tonic treatment. After the operation the patient remained well for thirteen months. The pain then returned and continued in spite of all treatment. Last March a second operation was performed, and a larger opening with the drill made. No benefit was produced.

DR. H. KNAPP stated that the cases which he had reported, where relief followed chiselling open a sclerosed mastoid, have remained well.

DR. CHARLES H. BURNETT, of Philadelphia, presented a paper

ON TWO CASES OF CHRONIC PURULENT INFLAMMATION OF THE ATTIC OF THE TYMPANUM, WITH PERFORATION OF THE MEMBRANA FLACCIDA, TREATED WITH PEROXIDE OF HYDROGEN.

In the first case no application had had the same good effect as the peroxide of hydrogen. Every other medic-

ament had seemed to irritate rather than heal the inflamed mucous membrane. In the second case, the discharge, which had been very chronic, was promptly checked by the use of the peroxide of hydrogen.

The chemical formula of this drug is H_2O_2 , and by its affinity for albuminous matters, especially those of pus, it seeks every particle of this matter in a cavity like the middle ear, and thoroughly cleans the parts. The union with pus is shown by a copious foam, which boils out of the external ear; when the foaming ceases, and the peroxide returns clear, the diseased cavity has been thoroughly cleansed. In many cases this seems sufficient to effect a cure. Where there is a perforation in the membrana flaccida, the application is made by means of the tympanic syringe, the long and slender nozzle of which is introduced through the perforation at the attic of the tympanum. The peroxide is used undiluted.

DR. WILLIAM S. LITTLE, of Philadelphia, read a paper entitled

IN THE PHYSIOLOGY OF HEARING IS THERE AN OVERLAPPING OF EACH AUDITORY FIELD THE SAME AS IN BINOCULAR VISION?

Cases of one-sided deafness afford the opportunity of mapping out the auditory field for one ear, and it is found that with the watch at two feet from the ear, the tick can be heard about ten or fifteen degrees across the median line of the head. This gives more scope to hear sounds produced on the side of the head opposite the good ear. The tuning-fork is not heard even up to the median line on the side of the ear tested. The watch has been used in making the observations. If the field of one ear reaches beyond the median line to about ten degrees, we have, when both ears are normal, an overlapping of each field to the extent of fully ten degrees on either side of the median line in front, above, and behind the head. Each ear hears sounds in this area of twenty degrees. Outside of this area each ear hears singly. By means of this there is no need to turn each ear toward the source of sounds which reach the individual; the direction of sound is best found in this way for safety in walking, and maintaining the erect position. Sudden loss of hearing on one side puts the sufferer to great annoyance, as the ability to determine the direction of sounds is, in a measure, lost, the patient often looking in the wrong place when called. It is fully as perplexing, if not more so, than in a case of sudden loss of sight in one eye, making seeing dependent on one organ of vision.

The attempt to restore hearing should be directed, not only to obtain hearing in a line directly in front of the ear, but also to increase the area of hearing in the affected ear, or in both affected ears, till it reaches, if possible, the coalescence seen in normal ears.

The literature of the subject of audition and otology does not give any information on this point; too close a comparison between the eye and the ear cannot be made. The auditory and optic nerves respond to very different stimuli. The auditory nerve has no commisure or decussation of fibres like the optic, and has a less central position in the cerebrum.

DR. GORHAM BACON, of New York, read by title a paper on *Two Cases of Ear Disease due to Traumatism*.

The Society then went into

EXECUTIVE SESSION.

The proposition with reference to the organization of

A CONGRESS OF AMERICAN PHYSICIANS AND SURGEONS was discussed, and favorably voted upon, and the following were appointed the Committee of Conference: Drs. C. R. Agnew, of New York; H. Knapp, of New York; John Green, of St. Louis; W. H. Carmalt, of New Haven; and George Strawbridge, of Philadelphia.

The following were elected

OFFICERS FOR THE ENSUING YEAR:

President.—Dr. J. S. Prout, of Brooklyn.

Vice-President.—Dr. Samuel Sexton, of New York.

Secretary and Treasurer.—Dr. J. J. B. Vermyne, of New Bedford, Mass.

Committee on Membership.—Drs. Gorham Bacon, W. S. Little, and E. W. Bartlett.

The following new members were elected: Dr. J. B. Emerson, of New York; Dr. J. O. Tansley, of New York; Dr. J. L. Minor, of New York; Dr. Henry L. Morse, of Boston; Dr. Huntington Richards, of New York; and Dr. T. Y. Sutphen, of Newark, N. J.

The Society then adjourned.

THE AMERICAN OPHTHALMOLOGICAL SOCIETY.

Twenty-second Annual Meeting, held at the Pequot House, New London, Conn., July 21 and 22, 1886.

(Specially reported for THE MEDICAL NEWS.)

WEDNESDAY, JULY 21.—MORNING SESSION.

THE PRESIDENT, DR. WM. F. NORRIS, of Philadelphia, called the Society to order.

A communication with reference to the organization of a

CONGRESS OF AMERICAN PHYSICIANS AND SURGEONS was read, and referred to a special committee for consideration and report.

DR. H. KNAPP, of New York, then read a paper on

PYOGENIC MICROORGANISMS, WITH DEMONSTRATIONS AND EXPERIMENTS.

He made some general remarks with reference to the dependence of suppuration on certain kinds of microorganisms, the pyogenic bacteria, of which pure cultures had been obtained during the past two years. He exhibited these bacteria in numerous test-tube specimens on agar-agar, and also under the microscope. He also exhibited slides of different tissues of the eyes that had been infected with these germs. He showed two rabbits which he had operated on the day before for cataract, in the presence of members of the Society. Extraction had been made on the left eyes with clean instruments, and on the right eye with instruments contaminated with staphylococcus pyogenes aureus. The left eyes were free from secretion; the right eyes discharged matters profusely, and were in a state of destructive inflammation. He then operated on the other rabbits in the same way.

The four rabbits were exhibited the next day. The right eyes in all were suppurating; the wounds of the left eyes in three of the rabbits were in good condition.

In one of the first two rabbits it was suppurating. This eye had become infected from the right eye of the other rabbit. They had been kept in the same box, and the operator had found them with their heads in contact.

In reply to a question as to the best method of cleaning instruments, Dr. Knapp said that in the institutions in Europe the instruments are placed in an antiseptic solution. This, however, has the disadvantage of dulling the edge of cutting instruments. His experiments had shown him that simple washing with water in the case of smooth instruments, followed by friction with a clean towel, renders them bacteriologically clean. Where an instrument has a groove, or is at all rough, it is much more difficult to clean. Instruments like forceps may be put in the antiseptic solution. It must be remembered that in the majority of our operations a certain quantity of infecting material is required to produce any effect. Where there is a free escape of liquid from the wound, the material is washed off; but where there is a sucking-in process, the danger is much greater.

DR. B. E. FRYER, of Kansas City, remarked that there was one antiseptic, lately come into use, which would probably not interfere with the edge of cutting instruments—that is hydro-naphthol. It has, however, not been sufficiently long under observation to enable us to say whether or not it will completely sterilize instruments. He suggested that chloroform would probably perfectly sterilize instruments.

DR. HUBBEL, of Buffalo, asked Dr. Knapp whether there were not certain conditions of the eye which favored infection of the wound after operation. He had recently, in a case of cataract in a man sixty years of age, operated where there had been a long-standing purulent inflammation of both conjunctivæ. He performed an iridectomy, following it in two weeks with extraction. Both operations were entirely successful and without accident, notwithstanding the fact that there was a constant purulent discharge. The only antiseptic used was a solution of boracic acid.

DR. H. KNAPP thought that a lachrymal discharge with a certain amount of conjunctivitis furnishes a favorable soil for the growth of bacteria. In operating in such cases, the discharge should be completely removed. A certain quantity of the pathogenic bacteria is required to produce infection. He had pricked the cornea to one-third or two-thirds its depth, and covered the wound with an emulsion of the bacteria. In only one out of every four or five did abscess develop.

DR. J. A. ANDREWS, of New York, said that he had frequently pricked the cornea and applied the staphylococcus pyogenes aureus, and had repeatedly seen recovery follow without suppuration or inflammation. Mere contact of the microbe with the wound is not always sufficient to produce suppuration, especially in the case of the cornea, where the discharge is liable to be washed off. Where the material has been introduced into the wound and kept there for a short time, he had never seen a failure.

In the cleaning of instruments, he used what he termed an aseptic fluid. It consists of clean water boiled some time. The principal value of antiseptic solutions in hospitals is that they furnish something one is sure is clean. Water is not always clean. He does not use boiling water in washing instruments; the water is boiled to render it aseptic.

DR. C. S. BULL, of New York, presented

AN ANALYSIS OF ONE HUNDRED CASES OF EXUDATIVE
RETINITIS OCCURRING IN THE COURSE OF BRIGHT'S
DISEASE.

Only such cases were included in the report as had been examined by the writer and had been followed to their termination. All cases due to scarlatina or pregnancy were excluded. Out of 500 cases examined, only 108 fulfilled these conditions. The ophthalmoscopic examinations were made by the author, and the urine was always examined. In 54 of the cases, both eyes were affected when the patient came under observation, and in 93 per cent. both eyes were ultimately involved. Hemorrhages occurred in 69 cases. In 34 cases there were no hemorrhages. The hemorrhages were intimately connected with disease of the bloodvessels. Only one instance of color affection was observed.

The prognosis with reference to the duration of life is very unfavorable. The 113 cases reported were collected during a period of thirteen years; of this number 86 have died, 57 during the first year and 12 during the second year; 17 were still living, but 14 of these presented themselves within the last six months. One of these cases, however, was seen for the first time seven years ago. A rather unusual complication was seen in four of the cases. That was the presence of sugar as well as albumen in the urine. The amount of sugar was variable.

DR. E. GRUENING of New York, had collected over one hundred cases of this affection, and he found that none of them had lived over two years after the diagnosis of retinitis albuminurica had been made. In this class of cases he has included only those in which the typical stellate changes were seen in the maculae of both eyes. He lately had seen this appearance in the macula of one eye in a patient who presents no evidence of Bright's disease. This was the first time that he had seen this exquisite change without signs of renal disease.

DR. B. E. FRYER, of Kansas City, said that in these cases albumen is occasionally absent from the urine for a short time. In two such cases he had found that albuminose was present during the time that albumen was wanting.

DR. DAVID WEBSTER, of New York, was satisfied that in rare instances these patients recover their general health and may live indefinitely. Some years ago he examined the eyes of a clergyman and found the typical appearances of retinitis brightii. He had been examined fifteen years previously, by a competent observer, who found the same condition and also found albumen and casts in the urine. The urine was examined and slight traces of albumen found.

DR. O. F. WADSWORTH, of Boston, said that where the retinitis albuminurica comes on during or immediately after pregnancy, he had seen the stellate spots in the maculae entirely disappear. He had also seen typical stellate deposits in cerebral tumor and in what was supposed to be meningitis, but in which there was no albuminuria.

DR. E. GRUENING, of New York, said that the cases of retinitis brightii which are seen in private practice, differ very materially from those which are seen in hospitals. The patients who consult the oculist are

usually those with the small contracted kidney, while the patients with the large, white kidney find their way to the hospital.

DR. C. S. BULL, of New York, in closing the discussion, remarked, that he had excluded all cases where the albuminuric retinitis was due to scarlet fever or to pregnancy. He did not mean to say that the so-called stellate exudation in the region of the macula is typical of Bright's disease. He had seen it in intracranial tumor and in cases supposed to be meningitis. Retinal exudation other than stellate he had seen not infrequently in cases of large white kidney.

DR. GEORGE C. HARLAN, of Philadelphia, then reported a case of

THROMBOSIS AND PERIVASCULITIS OF THE RETINAL
VESSELS.

The patient, a married woman, aged thirty-three years, came under observation June 5, 1886. Her father and a younger sister had died of Bright's disease, and her mother of paralysis. During the past two years she had had considerable headache. She had a miscarriage in July, 1881, from which her recovery was delayed. She had a second miscarriage, without special trouble, in January, 1886. There was no trouble with the eyes until May 7th, when she noticed dimness of vision in the left eye. This increased during the day, and the following morning there was only light perception in this eye. She was examined two weeks later by a surgeon, who pronounced the condition one of embolism. There was no suspicion of specific disease. There was no uterine trouble and the heart-sounds were normal. The urine had a specific gravity of 1.009, contained some albumen, but no tube casts were found. Examination of the eyes showed no light perception in the left eye. The media were clear. There were hemorrhages scattered through the retina. Some were striated, extending in long streaks along the vessels. There were three groups of white spots at the macula. With one exception, all the vessels of the retina were converted into white bands. The exception was a small artery having an independent origin. The vessels were of nearly normal size. Five or six weeks later, the hemorrhages had been absorbed, but there were no other changes. In the right eye there were several small hemorrhages and two filmy white patches; these subsequently disappeared. In July she had a slight attack of paralysis on the left side. Examination of the urine showed some albumen and hyaline tube casts. The rapid onset and the occurrence of blindness within a few hours, seemed to exclude the possibility of disease of the vessels. Embolism would not account for the condition. The speaker suggested that the partial blindness for the first few hours was due to hemorrhage, and that the complete blindness coming on later was due to thrombosis. Thrombosis of a whole series of vessels is, however, rare. Another possible explanation is that there had been, for some time, disease progressing in the outer walls of the vessels without giving rise to sufficient disturbance of vision to attract attention.

By way of comparison a second case was described, in which the affection seemed to be a perivascularitis. It was that of a negro woman who had been partially blind for a long time. The right eye was the seat of a dense

cataract. In the left eye $V. = \frac{20}{C}$. The lens was hazy and the disk pale. Extending upward, there was a large artery converted into a chalky band. Two smaller arteries exhibited the same condition in places.

DR. WILLIAM S. DENNETT, of New York, then described

A NEW TEST-TYPE.

He called attention to the fact that, although for twenty-five years the schools of the civilized world had been under the observation of oculists, who all agree that great good would be done by periodical examinations of the eyes of scholars, and although such examinations are very simple, the internal inertia of existing institutions has always prevented any continued action on the part of the schools. Among the laity there is absolutely no knowledge of what normal eyes should be expected to see. A card was presented which was designed for the use of educational institutions. It contained one set of letters, and a statement underneath of the exact distance at which these letters should be seen. The desire was expressed that this, or some similar card, should be placed on the wall of every school-room in a conspicuous place, so that it should become of necessity a familiar object and a standard of measurement that would be remembered through life.

DR. HASKET DERBY, of Boston, read a paper on
THE POSSIBLE RETARDATION OF RETINITIS PIGMENTOSA
IN THE YOUNG.

This affection is, as a rule, considered incurable, leading gradually to complete blindness. In America the disease is exceedingly infrequent, the author having seen it but 27 times in 13,000 eye cases. In 1881, a boy, three years of age, was brought to him from Western Virginia. It was observed that toward night vision diminished. There was no history of blindness in the family. Five years later he came again, accompanied by his sister, seven years of age. Both children were night-blind, and presented the evidences of retinitis pigmentosa. Under the use of the constant current, there was improvement. A similar case of improvement under the use of the constant current, under the care of Dr. Standish, was reported.

The object of the paper was to invite discussion as to the use or non-use of such eyes for educational purposes, and as to the possibility of adopting measures for delaying the progress of the organic change.

A third case, that of G. W., aged fourteen, was described. He presented the typical appearances of retinitis pigmentosa. Non-use of the eyes and the application of the constant current were recommended. He was subsequently advised by others to use the eyes freely. In five years vision diminished from three-tenths to one-tenth. This rapid progress of the disease, it was thought, might have been aided by the use to which the eyes had been subjected.

DR. WILLIAM S. LITTLE, of Philadelphia, reported one case of retinitis pigmentosa occurring in a deaf-mute, in which decided improvement in vision took place under the use of the faradic current. The improvement continued for two years without change. He then went West and seven years later he was doing well, but he could not see quite as well at night as before.

DR. L. WEBSTER FOX, of Philadelphia, had treated a number of cases successfully. He had found that it was the negative pole that produces the good results. He also noted that if there was no enlargement of the field after three applications, improvement was not to be expected. In all the cases in which improvement took place, the bloodvessels seemed to increase in calibre, and the night-blindness correspondingly diminished.

DR. GEORGE C. HARLAN, of Philadelphia, had recently seen two well-marked cases of this affection; one in a boy of seventeen years, and the other in his sister a few years older. His faith in any form of treatment being weak, he advised that the eyes be used as long as sight remained. From his experience he was led to believe that there is likely to be a culmination of the disease about puberty.

DR. GEORGE STRAWBRIDGE, of Philadelphia, said that he had tried the use of electricity in this affection thoroughly some ten years ago. He did not obtain benefit in a single instance, and placed more reliance upon the occasional use of alteratives, as bichloride of mercury and iodide of potassium, looking on these cases as probably of syphilitic origin.

DR. SAMUEL THEOBALD, of Baltimore, had seen temporary improvement from the continued use of phosphate of iron, quinia, and strychnia. One of these cases was seen some ten years ago, when eight years of age; he retains sufficient vision to enable him to perform his duties as a travelling salesman. There was no intermarriage of the parents of this patient, but there was a history of a similar trouble in other members of the family.

DR. S. D. RISLEY, of Philadelphia, remarked that it had seemed to him that, with the hypodermatic use of strychnia, he had secured improvement in the central sharpness of vision. He had frequently seen improvement follow the use of this drug, but, so far as he knew, it had never been permanent. As regards the age at which the affection may develop, he had seen it occur under five years of age, in two children of the same family.

He reported the case of a young man with retinitis pigmentosa, with marked contraction of the field, and asthenopia principally due to hypermetropic astigmatism. He was treated with alterative remedies for two years, during which time the difficulty had not materially increased. To relieve the asthenopia a weak solution of eserine, sufficiently strong to contract the pupils without causing peri-orbital pain, was ordered, and under its use vision decidedly improved. He has used this solution more or less constantly for the past two years, and finds that when he is without it, he is distinctly more uncomfortable.

DR. O. F. WADSWORTH, of Boston, referred to a case which, in connection with those reported, shows the variable course the disease may pursue when left to itself. A young man, twenty-four years of age, a divinity student, was seen in 1873 presenting typical retinitis pigmentosa so far as the ophthalmoscopic appearances were concerned. He had well-marked night-blindness. He continued his work, and when seen eight years later, vision was about the same, but the visual field seemed to have decreased to a slight extent.

Dr. EDWARD JACKSON, of Philadelphia, read a paper on

THE EQUIVALENCE OF CYLINDRICAL AND SPHERO-CYLINDRICAL LENSES.

It was intended to demonstrate the laws of such equivalence, showing that equal crossed cylindrical lenses are optically equivalent to a spherical lens of the same refractive power. Crossed cylinders of unequal refractive power may be regarded as crossed cylinders of equal refractive power combined with a third cylindrical lens, or, as their equivalent, a spherical combined with a cylindrical lens. It was proven that any two cylindrical lenses with their axes placed obliquely the one to the other, might be represented by crossed cylinders—that is, cylinders with their axes perpendicular to one another, or by their equivalent in the shape of a spherocylindrical lens; hence that any number of cylindrical lenses with their axes placed in different directions are optically equivalent to a single spherocylindrical lens. To determine the spherocylindrical equivalent of any two cylindrical lenses, construct a parallelogram, two sides of which are proportional to the refractive power of the given lenses, the angle included by those sides being double the angle made by their axes. Then the diagonal which cuts this included angle will be proportional to the cylindrical portion of the desired equivalent; and to get the spherical portion it is only necessary to subtract one-half of this cylindrical equivalent from half the sum of the cylinders given.

Dr. WILLIAM S. LITTLE, of Philadelphia, in speaking with reference to the practical side of this question, said that in about one-half of his cases of mixed astigmatism the patients have preferred crossed cylinders to their equivalent spherocylinders. In using a spherocylinder it is essential that it be accurately centred.

The committee to whom was referred the consideration of the proposition with reference to the organization of a

CONGRESS OF AMERICAN PHYSICIANS AND SURGEONS,

reported the following resolutions, and recommended their adoption:

Resolved, That a committee of five be appointed by this Society, and be authorized to confer with committees from other medical societies with regard to the organization of a convention or congress of such societies, and report at the next meeting of this Society.

Resolved, That it is the sense of this Society that its welfare would be put in peril by any alliance or coöperation which would interfere with its autonomy or independent meeting.

These resolutions were adopted, and the following committee was appointed: Drs. O. F. Wadsworth, of Boston; C. S. Bull, of New York; George C. Harlan, of Philadelphia; Samuel Theobald, of Baltimore; and B. E. Freyer, of Kansas City.

AFTERNOON SESSION.

Dr. GEO. STRAWBRIDGE, of Philadelphia, reported

263 CASES OF CATARACT EXTRACTION WITH PARTICULAR REFERENCE TO THE AFTER-TREATMENT.

Two hundred and twenty-three of the above cases had never been reported. The operation was performed

by the modified flap extraction, in which the incision lies midway between the old Gräfe incision and the corneal flap incision. It avoids the risks of both of these methods, and gives a sufficiently large opening. An iridectomy in an upward direction was always performed. Formerly the lens was removed by pressure with the spoon directly on the cornea, but fearing injury to that tissue, during the past year pressure with the finger on the closed eyelid had been substituted. The results had been as follows: Successful cases, 85.2 per cent.; partial successes, 8.1 per cent.; and failures, 6.7 per cent. Those cases were classed as failures in which fingers could not be counted at a distance of one or two feet. In twelve cases absolute loss of the eye occurred. These were, with one exception, lost by choroiditis. The other case was lost by choroidal hemorrhage.

After the operation the eye was thoroughly cleansed, and for the past two years a solution of boracic acid (two per cent.) had been employed. The speaker's former plan had been, after applying a bandage, to put the patient to bed in a darkened room, keeping him in bed for four to six days. Two-thirds of the cases had been treated in this way. He had found this plan exceedingly debilitating in elderly individuals, and during the past eighteen months he had gradually given it up, so that during the past six months the patients were, practically speaking, kept in bed only twenty-four hours. The room is as light as any ordinary room. The first element in the treatment of old people is to make them comfortable. If, at the end of twenty-four hours, everything is doing well, the patient is allowed to move about the room. No unsatisfactory result had followed this plan.

The speaker had employed in some cases cocaine. In one case, in which a four per cent. solution was used, a violent purulent inflammation began within twenty-four hours and resulted in total loss of the eye. Subsequently he had employed it without unpleasant results. His plan is to use a two per cent. solution, drop in one drop, wait a minute and drop in a second drop, and use only two drops. As much anæsthesia as is desirable is thus obtained. He had never employed any antiseptic except the two per cent. solution of boracic acid, and while this does no harm, he thought that it did little good. He attaches much importance to stimulation after the operation. In elderly people the use of whiskey is begun a few hours after the operation.

Dr. H. KNAPP, of New York, read a paper on

CATARACT EXTRACTION WITHOUT IRIDECTOMY.

Of the new operative measures which he had seen in Europe there were two above all others which he thought worthy of being tried; one was extraction without iridectomy, and the other, advancement of Tenon's capsule. Of the fourteen cataract extractions which he had made since his return, the last six had been without iridectomy. Three of these had made ideal recoveries, no reaction, clear, central, movable pupil, neither an anterior nor a posterior synechia. The other three had more or less posterior synechia, leaving the pupil ragged and somewhat obstructed, yet the adhesions were simple, not spreading a pseudo-membrane over the area of the pupil. Vision was fair, and could be rendered excellent by a simple needling, if remaining insufficient.

He followed Panas in the performance of the opera-

tion, large section along the upper margin of the cornea, free laceration of the capsule, expulsion of the cataract and its remnants, reduction of the iris with a probe if it did not occur spontaneously. Before the operation the eye is fully cocaineized, the lids and conjunctival sac washed and sterilized. The instruments and hands are treated in the same way. After the expulsion of the lens, a small quantity of an antiseptic is injected into the anterior chamber along the whole section and eserine instilled into the conjunctival sac. The speaker believed that the chief advantage of this operation lies in the possibility of keeping the wound perfectly free from foreign substances, including portions of the lens, capsule, and iris. How often anterior and posterior synechiæ occurred, what the final visual results were, and how frequently after-operations would be required, were questions which could only be answered by extended statistics.

DR. DAVID WEBSTER, of New York, presented a

REPORT OF FIFTY CASES OF CATARACT EXTRACTION.

In seventeen cases the operation was done under ether, in twenty-seven, under cocaine, and in six no anæsthetic was employed. The results were: Successes, 82 per cent.; partial successes, 12 per cent.; failures, 6 per cent.

Aseptic precautions were used in all the operations.

The best vision obtained in any case was $\frac{20}{15}$. Dr. Webster advocated the extraction of both lenses at the same sitting in judiciously selected cases.

Dr. Webster also related the history of a case in which he had relieved the pain in a glaucoma absolute by lacerating the infratrochlear nerve—Badal's operation.

DR. HENRY D. NOYES, of New York, reported the

DEATH OF A PATIENT ON THE FIFTH DAY AFTER THE EXTRACTION OF A HARD CATARACT.

The operation, which was perfectly satisfactory, was performed on Sunday morning and the patient suddenly died the following Friday morning. After the operation a bandage was applied and the patient put to bed. The dressing was not disturbed until the third day. Everything seemed to be doing well, and the patient made no complaint. On Friday morning she suddenly complained of a feeling of prostration and within half an hour she died. The only lesions found at the autopsy were dilatation of the heart and insufficiency of the valves of the left side. The death seemed to have been due to heart failure. The contents of the orbit were removed *en masse*. A certain amount of force was used, and, as a consequence, the corneal wound was partially opened. The eyeball had been hardened and ten sections made to demonstrate the kind of union which we have at the end of the fifth day. Inspection of the eye before death showed that the union was smooth and apparently perfect. What is particularly interesting about these specimens is that the union appeared to have taken place exclusively through the medium of the epithelial layer.

DR. DAVID WEBSTER, of New York, said that the more he had employed cocaine the more did he see the necessity of using as little as possible in cataract extraction. He attributed the bad results in some of his

cases to the use of too much cocaine. In his later operations he has done about as Dr. Strawbridge has recommended.

DR. B. JOY JEFFRIES, of Boston, had found it of decided advantage in cataract extractions to instil cocaine into both eyes. One drop a minute or two before the operation is sufficient. It renders the eye quiet, and the patient can keep it open.

DR. C. R. AGNEW, of New York, thought that the best plan to follow in the use of cocaine is to instil a drop of a four per cent. solution, and hold the lids open to allow it to become diffused; then wait three or four minutes; the eye may then be touched with an instrument to ascertain whether or not the sensitiveness has been sufficiently obtunded. One or two drops are usually sufficient, and employed in this way the possibilities of evil effects are reduced to a minimum. It had never been his custom to incarcerate patients in a dark room after a capital operation on the eyes.

DR. W. F. MITTENDORF, of New York, had seen two cases of serious complication after cataract, which he attributed to the use of cocaine. In one the eye was lost, and in the other it came near being lost. The cocaine solutions were fresh, but they were strong and used freely. He thought that one reason bad results are obtained is because the eye is left exposed to the air for several minutes after the introduction of the cocaine solution. Recent observations show that the injurious action of cocaine is especially upon the epithelial layer, and in shutting off the supply of lymph fluid. The epithelium suffers very rapidly from lack of moisture, especially if the eye is kept open. It has been recommended to close the eye immediately after the introduction of cocaine. He uses a weaker solution than a two per cent., making it fresh every day, by the addition of one or two grains of cocaine to half an ounce of water. Since using the weak solution and taking the precaution to close the eye after its instillation, he has had no serious accident.

DR. WM. THOMSON, of Philadelphia, remarked that the first time he used cocaine he directed the apothecary to make a two per cent. solution; instead he made a solution of two grains to the ounce. Three operations were performed with perfect success, and it was not found out until afterward that a mistake had been made. Since then, he had not considered it necessary to use strong solutions.

DR. EMIL GRUENING, of New York, said that last summer he went to de Wecker's clinic to see him perform cataract extraction without iridectomy. He learned that he employed this method only in the winter-time. The reason for this was that during the hot weather of summer the patients are very restless, and as a result prolapse of the iris frequently occurred. He decided to try the operation, and in May, 1886, performed his first operation. Half an hour before the operation he instilled a few drops of a solution of eserine (half a grain to the ounce). A few minutes before the operation the eye was cocaineized with a four per cent. solution. There was no difficulty in removing the lens. After the operation eserine was again instilled, and the eye bandaged. Forty-eight hours later, the bandage was removed. The patient made pressure on the eyeball. The anterior chamber was emptied, and the iris prolapsed. He was compelled to remove the iris. There

were no further accidents. A few days later, he operated on a second case with perfect success. In regard to the action of cocaine, he referred to a case of an acute exacerbation in chronic glaucoma. The eye was very painful and very hard. He directed that a six per cent. solution of cocaine should be instilled. A few minutes later, on opening the lids and introducing the speculum, a bladder arose between its blades. Examination showed that this was the epithelium of the cornea, which had become raised. The operation of sclerotomy, which was about being performed, was postponed; but it eventually became necessary to remove the eyeball.

DR. H. D. NOYES, of New York, had performed extraction without iridectomy in six cases. He had used cocaine. The cleansing of the anterior chamber and the removal of lens matter had been accomplished partly by manipulation and partly by irrigation. For washing out the conjunctival bag and removing matter from the anterior chamber, he uses a rubber bulb holding two or three ounces, and terminating in a short nozzle. It is not necessary to introduce a nozzle between the lips of the wound. The iris may be satisfactorily replaced by a stream of water. He used eserine, not as a preliminary, but as a dressing, in the form of an ointment containing two drachms of eserine to the drachm of vaseline. A small portion of this is placed in the conjunctival sac, and spread on a piece of linen covering the eye. In three of the six cases there was perfect union, with a central circular pupil and accurate vision. In one case intraocular hemorrhage came on twelve hours after operation, but this might happen under any method. In two cases prolapse of the iris was found on the seventh day, when the eye was carefully examined for the first time. The prolapsed iris was excised, and in one case the result was entirely satisfactory. In the second case no satisfactory vision was obtained.

His impression from this series of cases was that, while the operation deserves attention, the cases must be carefully selected. If the patient had but one eye, he would prefer to operate on it with a preceding iridectomy, and not without. He believes that a satisfactory result can be more certainly secured with iridectomy. As to the visual result, while theoretically it would be better, it is not always so.

DR. SAMUEL THEOBALD, of Baltimore, in a case in which cocaine was used where there was stricture of the nasal ducts, has invariably observed that after the instillation of cocaine, the cornea, which has been clean and bright, becomes dull, presenting the appearance as though it had been roughly handled. He had noticed a similar result in another case.

DR. B. E. FRYER, of Kansas City, said that in about ten cases he had used cocaine in this way: Inserting one drop every half hour until four or five drops have been used. In this way the iris becomes completely anesthetized, and where we wish to perform iridectomy this is important.

DR. B. ALEXANDER RANDALL, of Philadelphia, remarked that there was one point not distinctly referred to in the discussion, and that was, whether or not inflammation of the iris is more frequent after this operation than where iridectomy is done. In the thirty or more cases which he saw at the clinic of Panas two years ago, there was not a single case of iritis. There were, however, several cases of prolapse. Panas claimed

that there was less inflammation than after the ordinary operation. It is proper to say, with reference to iridectomy, that, with a small iridectomy, the pupil may be as movable and as central as in the operation described.

DR. B. JOY JEFFRIES, of Boston, reported

SOME MEDICO-LEGAL CASES.

He first read the law of Massachusetts in regard to the examination of railroad employees and others for color-blindness, and stated that it was practically a dead letter, and could not be enforced. In order to make it efficient, some standard test must be adopted. Many instances in which the law had been evaded or ignored were given. Many cases were cited, particularly of railroad engineers and steamboat pilots, where lives of many passengers had been endangered by this defect.

DR. CHARLES A. OLIVER, of Philadelphia, exhibited and read a description of

A NEW SERIES OF LOOSE WOOLS FOR THE SCIENTIFIC DETECTION OF SUBNORMAL COLOR-PERCEPTION (COLOR-BLINDNESS).

They comprise ninety-seven bundles of Berlin worsteds, composed of five large principal test-skeins, twenty small pure match skeins, and seventy-two small confusion skeins. To each small skein there is attached a metallic bangle, bearing the exact equivalence of the color's composition, tint, and shade, stamped upon it in a way that can only be understood by the surgeon. The colors are all of equal relative intensity; the wools are all of one manufacture, and have been dyed with vegetable materials.

The following advantages are claimed for the series: That there are five tests; that the wools are loose, and all of the colors of the same relative intensity; that each skein has its value expressed, so that the skeins can be employed by any intelligent layman; that accurate notings of color changes can be made for future comparison, and proper verbal and written expression can be given; that by reason of the wools all being of the same grade of manufacture, and all the colorings obtained from vegetable dyes, no results can be gotten from the supplemental sense of touch; and, finally, that a black surface is employed, and no definite order of testing need be pursued.

DR. WM. S. DENNETT, of New York, exhibited a set of Holmgren's worsteds which had been made into spheres, and to each one a number was attached. It was thought that considerable elegance and some advantage would result from using Holmgren's or Thomson's test in this manner.

(To be concluded.)

CINCINNATI ACADEMY OF MEDICINE.

Stated Meeting, May 24, 1886.

THE PRESIDENT, JAMES T. WHITTAKER, M.D.,
IN THE CHAIR.

(Continued from page 109.)

THE MEDICAL TREATMENT OF ECHINOCOCCUS.

DR. A. B. THRASHER remarked that there is unanimity of opinion among authors with reference to the therapeutic treatment of echinococcus, namely, that it is unsuccessful. The case reported by Leidy was referred to in evidence of the futility of medicinal treatment. In

that case, after the subject had been injected with a strong solution of the chloride of zinc, and after all the tissues had become thoroughly blanched, there was still evidence of living hydatids. The hygienic care of the patient is of importance, and the subject of prophylactic measures opens a fruitful field of study.

DR. R. B. DAVY agreed with the last speaker that very much cannot be said in praise of the treatment of echinococcus with the administration of medicines by the mouth, some authorities to the contrary notwithstanding. When the echinococcus disease has been diagnosed beyond a peradventure, it is customary to prescribe something to be taken by the mouth, whether or not it becomes necessary to pursue other treatment. In the event of the death of the endocyst during the continuation of said treatment, and such a thing may occur from purely accidental causes, the drug used gets the credit for the cure. In this way, Hjaltelin claims to have cured twenty-two persons with the tincture of kamella; Heckford caused the disease affecting the liver to disappear in five weeks with twenty-seven grains daily of the iodide of potassium, and Reeb, with the same remedy, thought he had several times cured echinococcus of the brain. The salts of mercury, turpentine, etc., have been spoken of as possessing similar power over this parasite, but most authorities doubt the curative effect of any drug administered by the mouth. Of the forty-six cases reported by Heller as occurring in English hospitals, thirty-six were cured by puncture alone with the escape of part of the fluid. In the remaining ten suppuration occurred, making a larger opening necessary, and two of these cases died. The fact that so many of these cases should terminate favorably after the escape of often a small amount of fluid, is very significant. The condition is not at all unlike that which might be brought about by the action of a hydragogue cathartic, active diuretic, or diaphoretic. By agents of this kind the blood stream is robbed of its water, and the cyst is in turn deprived of some of its fluid through the absorbents. The tension of the fluid within the cyst being thus reduced, the parasite might be made to die without further interference. I have no desire to be understood as seconding the treatment of echinococcus by the administration of drugs, except in cases where the aspirator needle, the surgeon's knife, etc., are not applicable, yet I cannot help believing that the benefits attributed to them are brought about in the manner described, and not by any special deadly influence over the parasite. Cobbold, in discussing the effect of drugs administered by the mouth, describes the dense ectocyst and the difficulty or impossibility of reaching the vital endocyst with blood sufficiently charged with any anthelmintic to produce any effect upon it. Hearn says that the medical treatment of hydatids in no way affects the prognosis; and Todd affirms that the only cure for them is their evacuation. Notwithstanding these dogmatic assertions, it must be accepted that trivial influences often affect the vitality of the parasite, and that its death sometimes takes place without any assignable cause. It is, therefore, well to bear in mind that medicines internally, as well as electrolysis, aspiration, and the injection of certain drugs directly into the sac are not to be lost sight of in our hurry to plunge in the bistoury and terminate the case. While prompt treatment is important in rapidly

growing cases, slow ones should be handled with moderation and caution, for it is often better to resign the parasite to natural decay than to subject the patient to unnecessary risk. In the hands of Fagge and Forster, electrolysis seems to have been used with advantage, while with other observers the injection of iodine, carbolic acid, gall, etc. has found favor. In ruptured and discharging hydatids of the lung, where the breath is liable to become very offensive, an efficient deodorizer is called for. Heller advises inhalations of turpentine to overcome this difficulty, but it is hardly apparent that this agent should be superior to zinc chloride, carbolic acid, iodine, etc.

In hydatid of the brain or heart, where it is possible to arrive at a diagnosis, the slender hope attached to the use of medicines by the mouth is about all that is left and should not be minimized. In these cases a lesson might be learned from the rest and starvation treatment of aortic aneurism. So much then for the medical treatment of echinococcus. As may be seen, it is not entirely devoid of importance, yet stands much beneath the possible aid of the surgeon. The importance of every kind of treatment stands eclipsed by prevention.

The prophylaxis of echinococcus is to the treatment of the disease, Dr. Davy continued, as life is to death—the one filled with smiling possibilities, the other loaded with gloomy forebodings and disappointments. By proper attention to this subject many observers think that the disease may be actually stamped out. In Iceland, where one-sixth of all deaths are from this cause, Krabbe affirms that twenty-eight per cent. of the dogs are infested. These dogs often come into the closest contact with their masters. The dog's intestines are the acknowledged home of the *tænia echinococcus*, and in passing with the feces ova may adhere to the anus, to be in turn transferred to the dog's nose and mouth. After this, food or drink shared with the dog is a possible source of infection. This intimate association between dog and master could hardly be possible in our country, yet the equally dangerous habit of kissing the pug or lap-dog is common enough. To avoid these dangers of infection, Leukhart advises that all dogs be kept aloof from slaughter houses and that suspicious offal be burned. Leared says that dogs should be purged at intervals with anthelmintics and cathartics, and Cobbold advances the idea of disinfecting their feces with boiling water. Still-water to which dogs have access should not be used for drinking, as even in this country it can never be regarded as safe. Meat inspectors of cities and towns should thoroughly understand the habits and haunts of these parasites—as they do not—and be able to act intelligently in the effort toward exterminating them. The eating of uncooked meats should for this and other reasons be carefully avoided.

(To be concluded.)

NEWS ITEMS.

MONTREAL.

(From our Special Correspondent.)

NEW HEALTH BILL.—The new Health Bill which was passed before the dissolution of the Legislature, is a very weak affair. Neither political party wished to pass

a very stringent bill, as the Provincial elections are close at hand. The *habitants* strongly object to compulsory vaccination, and the ecclesiastical authorities to compulsory registration of births. So both these most important clauses of the bill were dropped, and the consequence is that we now have an emasculated health bill which can be of but little service to the country.

LAVAL AND VICTORIA.—The dispute between these two medical schools is not yet settled, and appeals are still being made to Rome to decide in favor of one or other school.

Within the last month several professors of the rival schools have sailed for Europe, and it is believed by many that their destination is Rome, and their object to plead the cause of the schools they represent before the Pope, who, apparently, is the director of even medical education in French Canada.

HYDROPHOBIA.—Dr. Rodier, who has been sent over to France by the Provincial Government of Quebec to learn Pasteur's methods of inoculation for rabies, has arrived in Paris, and has been well received by the great scientist. It will seem strange to outsiders that whilst other countries are sending their ablest and most experienced men to investigate and report on Pasteur's methods, the Province of Quebec should be satisfied to be represented by a young man who has but just graduated (1886), who could have had no experience, and who, so far, has shown no special aptitude for scientific research; but here, as well as elsewhere, politics is at the bottom of the evil.

Whilst on this subject it might be mentioned that no case of hydrophobia has occurred here within the memory of man, the disease being unknown. One of the Governors of Canada is said to have died of rabies many years ago, due to the bite of a pet fox; but with this exception no other case is known. Some deny that this was a case of rabies.

CANADA MEDICAL ASSOCIATION.—The annual meeting takes place in the city of Quebec on the 18th and 19th of August, under the presidency of Dr. Holmes. A large number of papers have already been promised, and a very successful meeting is expected. A number of prominent men from your side of the line have promised to be present.

COLLEGE OF PHYSICIANS AND SURGEONS OF THE PROVINCE OF QUEBEC.—The triennial meeting of the College was held here on the 14th instant.

The amendments to a medical act submitted by a committee of the Council were submitted and approved. The amendments provide for a compulsory examination in all subjects before a board of examiners, English and French, appointed by the medical schools and Council. No medical degree will entitle the possessor to take out a license as heretofore, but all persons, without exception, will have to pass an examination in both primary and final branches not less than four years after having passed the preliminary examination in classics, mathematics, literature, and philosophy.

Heretofore holders of Canadian or British diplomas were entitled to registration as qualified practitioners, provided they had studied four years after passing a prescribed preliminary examination. The amendments

also provide that the Province of Quebec shall be divided into six electoral districts, each district to elect its own representatives to the Council.

The following office-bearers were elected for the new Council:

President.—W. H. Hingston, M.D.

Vice-Presidents.—Hon. Dr. Ross and J. L. Leprohon.

Secretaries.—F. W. Campbell, M.D., for Montreal; A. G. Belleau, M.D., for Quebec.

Treasurer.—E. P. Lachapelle, M.D.

Registrar.—L. La Rue, M.D.

In consequence of a provision in the new Medical Act in Great Britain, holders of British qualifications will not be entitled to practise without examination in the Provinces of Ontario or Quebec.

STALE EGGS.—At a recent meeting of the Council of Hygiene, in the Department of the Seine, France, a question was raised as to the fitness for food of eggs which had been laid for a considerable length of time, and which offered certain peculiarities, such as external and internal spots, and the yolks having a strange color, and adhering to the shell. Various considerations on the subject had been submitted to M. Chatin, with the request that he would inform the Council whether, in the case of eggs so affected, it would be necessary to prohibit their sale. The reporter stated that eggs which had spots about them were not necessarily damaged, and that they might be used by bakers and confectioners for glazing bread, and some kinds of pastry, whilst the whites could be used by leatherdressers, who employ albumen in the preparation of articles made of leather. He added that eggs which were really damaged could easily be distinguished on account of the smell. Under these considerations, M. Chatin thought there was no necessity to forbid the sale of them. That a stale egg may, in some cases, be safely eaten, like high game, is quite comprehensible; but game, as well as eggs, cannot be eaten when putrid beyond a certain extent, probably because germs of extreme septic virulence, resisting the gastric juice, have been developed. In the earlier stages of decomposition, both these articles of diet appear to remain innocuous, the game being toothsome to the many, the eggs to the few.

ACCOUCHEMENT OF A TURKISH PRINCESS.—Dr. J. A. S. Grant was called upon to attend a Turkish Princess in confinement, she having heard that he would administer chloroform. Everything connected with the delivery passed off successfully and it is considered a most auspicious introduction of chloroform and medical men into the harems for confinements.

THE STRENGTH OF SPIRIT OF NITROUS ETHER.—A question of some importance to the medical profession came the other day before the Thames Police Court, when Mr. John Read Morrison, a practitioner, of 57 Cannon Street, St. George's-in-the-East, who keeps a shop, was summoned for selling a quantity of spirit of nitrous ether not of the nature and quality of the article demanded, the drug being deficient in nitrous ether to the extent of eighty per cent. Mr. William Raines, sanitary inspector to the parish of St. George's-in-the-East, said that on June 10th, about 11 o'clock, he called at the

shop and asked for two ounces of spirit of nitrous ether, which the defendant served him with, and for which he paid 8d. Witness then told him that it would be analyzed by the public analyst. The analyst's certificate showed that the drug was deficient in nitrous ether to the extent of eighty per cent. Mr. Young, who defended, submitted that there had been no offence. The article was pure, and the deficiency was caused by decomposition and evaporation. Mr. John Beckett, assistant to Dr. Tidy, at the London Hospital, said he had analyzed the sample of the drug submitted to him by the defendant, and found it to be pure. The nitrous ether was liable to decomposition and evaporation. There was certainly a deficiency. Every time the bottle was opened, some of the nitrous ether would go out. Mr. Hannay said it was too important a question for him to decide at once, and he adjourned the case for a week.

FEMALE PHYSICIANS IN THE FIFTEENTH CENTURY.—Dr. Horowitz, of Frankfort-on-the-Main, has (*The Jewish Chronicle*, May 14, 1884) published a work, entitled "Jüdische Aerzte in Frankfurt," in which the learned author mentions the interesting fact that, as long as four hundred and fifty years ago, Jewesses practised medicine in that city; they especially devoted themselves to ophthalmia. The female oculist, Dr. Zerlin, whom we meet with in the volume as having practised in the year 1428, ventured to reside outside the Judengasse, and believed that she could claim exemption from the payment of taxes on account of her talent, and the general esteem in which she was held. The municipal council rejected her application, and, in 1489, they ordered that Jewish lady doctors should either quit the city or pay taxes like other Jews. A Jewish doctress was, however, more fortunate in the year 1494; she was relieved from the payment of "sleeping money," a tax imposed on foreign Jews for every day that they stayed in Frankfort. With this exemption was coupled an official recognition of her profession, which was of the utmost advantage to the lady.

MEDICAL MALPRACTICE IN CHINA.—The Chinese penal code does not favor medical malpractice, as the following quotation will show. "Whenever an unskilful physician, in administering medicines or using the acupuncture needle, proceeds contrary to the established forms, and thereby causes the death of the patient, the magistrate shall call in other physicians to examine the medicines or the wound. If it appear that the injury done was unintentional, the practitioner shall then be treated according to the statute for accidental homicides, and shall not be allowed any longer to practise medicine. But if he have designedly departed from the established forms and have practised deceit in his attempts to cure the malady, in order to gain property, then, according to its amount, he shall be treated as a thief; and if death shall ensue from his malpractice, then for having used medicine with intent to kill he shall be beheaded."

DR. THOMAS R. FRENCH, of Brooklyn, has been appointed to the Chair of Laryngology in the Long Island College Hospital.

DR. CUTTER'S DICTIONARY.—A German-Japanese medical dictionary has just been published in Tokio.

It was compiled by Dr. Shigu, a government examiner in medicine, and Messrs. Take and Shibatta, officers of the Sanitary Bureau. The work contains 1400 German terms, with definitions in Japanese, and it is stated in the preface that it is based upon the "Dictionary of German Terms used in Medicine" compiled by Dr. George R. Cutter, of New York.

DR. JOHN C. DALTON received the degree of LL.D. from Princeton College at its last commencement.

A POST-GRADUATE SCHOOL is to be organized in Edinburgh, and another, possibly, in Glasgow.

OBITUARY RECORD.—**CHARLES W. FABYAN, M.D.**, died July 23d, at Providence, R. I., where he had practised medicine since 1840. Dr. Fabyan was in his seventy-fourth year. He was born at Scarborough, Me., and graduated from the Bowdoin Medical School in 1837. He was a Fellow of the Rhode Island Medical Society, and was highly esteemed as a citizen and a physician.

NOTES AND QUERIES.

LIME-WATER AS A DETERGENT.

To the Editor of THE MEDICAL NEWS,

SIR: In my practice I am obliged to make frequent uterovaginal examinations and applications, and in cleaning the parts of catarrhal or leucorrhoeal discharges, especially those of a more tenacious character from the cervix uteri, I have found the operation greatly facilitated by the application of lime-water, either by syringe or on cotton. Respectfully yours,

M. G. LEWIS, M.D.

HAYWARD, WIS., June 30, 1886.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE U. S. MARINE-HOSPITAL SERVICE, FOR THE WEEK ENDING JULY 24, 1886.

CARMICHAEL, D. A., *Passed Assistant Surgeon*.—Granted leave of absence for thirty days, July 24, 1886.

MAGRUDER, G. M., *Assistant Surgeon*.—To proceed to Cairo, Ill., for temporary duty, July 22, 1886.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT OF THE U. S. ARMY, FROM JULY 20 TO JULY 26, 1886.

PERIN, GLOVER, *Colonel and Assistant Surgeon-General*.—Leave of absence extended one month.—S. O. 165, A. G. O., July 19, 1886.

GIBSON, J. R., *Major and Surgeon*.—Ordered from Department of the East to Department of Missouri, on expiration of leave of absence granted in S. O. 158 c. s., A. G. O.—S. O. 168, A. G. O., July 22, 1886.

GARDNER, WM. H., *Major and Surgeon*.—Granted four months' leave, to take effect August 10, or as soon thereafter as his services can be spared.—S. O. 165, A. G. O., July 19, 1886.

MIDDLETON, PASSMORE, *Major and Surgeon*.—Ordered to Department of the East from Department of Missouri.—S. O. 168, A. G. O., July 22, 1886.

DE WITT, CALVIN, *Major and Surgeon*.—Assigned to duty at Fort Sully, Dakota.—S. O. 66, Department of Dakota, July 14, 1886.

DICKSON, JOHN M., *Captain and Assistant Surgeon*.—Ordered from Alcatraz Island, Cal., to Fort Mason, Cal.—S. O. 56, Department of California, July 8, 1886.

COCHRAN, JOHN J., *Captain and Assistant Surgeon*.—Ordered from Fort Mason, Cal., to Presidio of San Francisco.—S. O. 56, Department of California, July 8, 1886.

GIBSON, A. J., *Captain and Assistant Surgeon*.—Ordered from Fort Winfield Scott, Cal., to Alcatraz Island, Cal., on return from leave of absence.—S. O. 56, Department of California, July 8, 1886.